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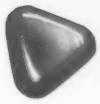

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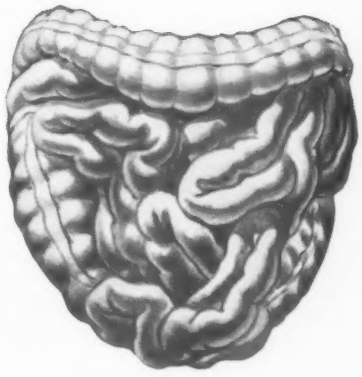

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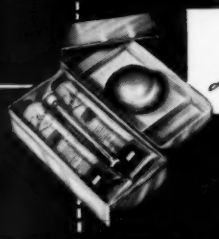

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JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is published monthly by the American Medical Women's Association, Inc., at 136 4th Ave., Nashville 3, Tenn. Entered as second class matter at the Post Office at Nashville, Tennessee, under the Act of August 24, 1912. Acceptance for mailing at special rates of postage provided for in Section 1102, Act of October 8, 1917, and authorized July 15, 1918.

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Subscription, $3.00 per year; 50c single copy.

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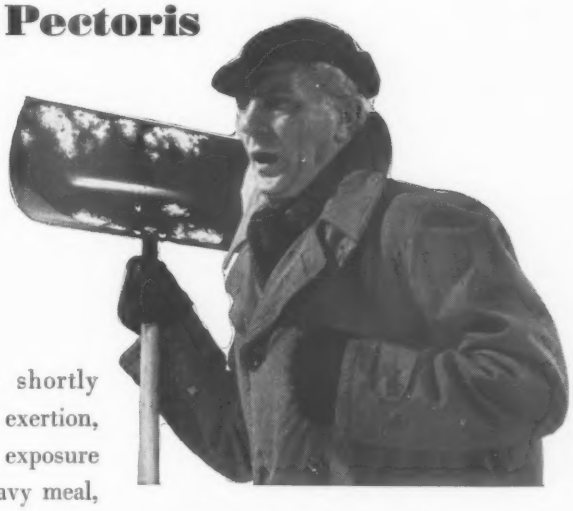

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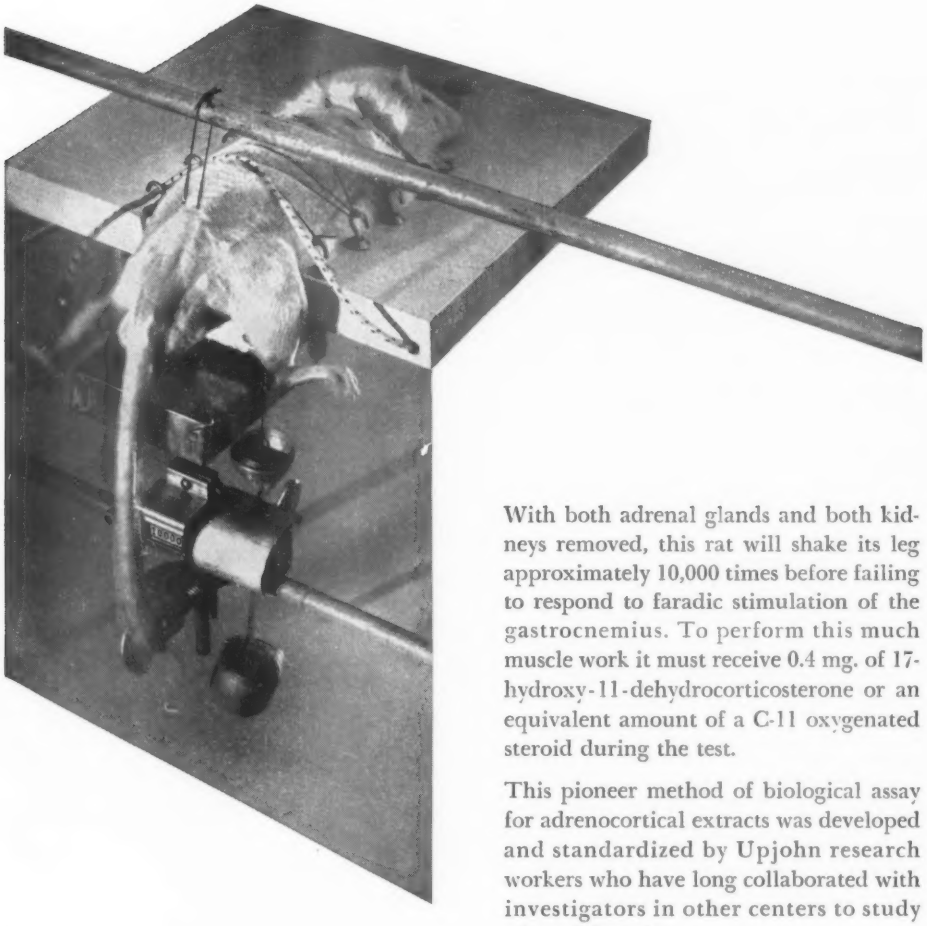

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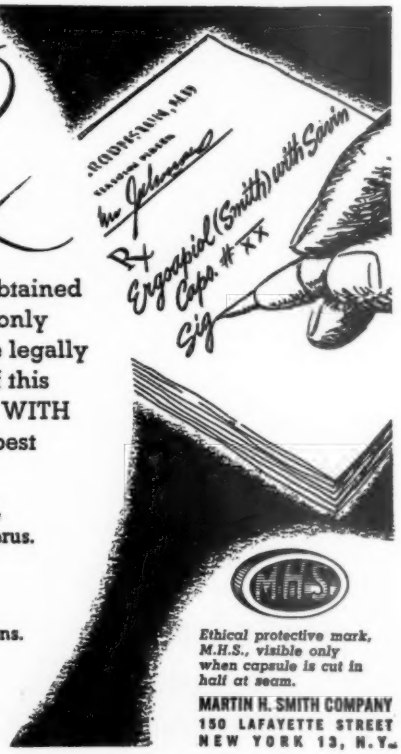

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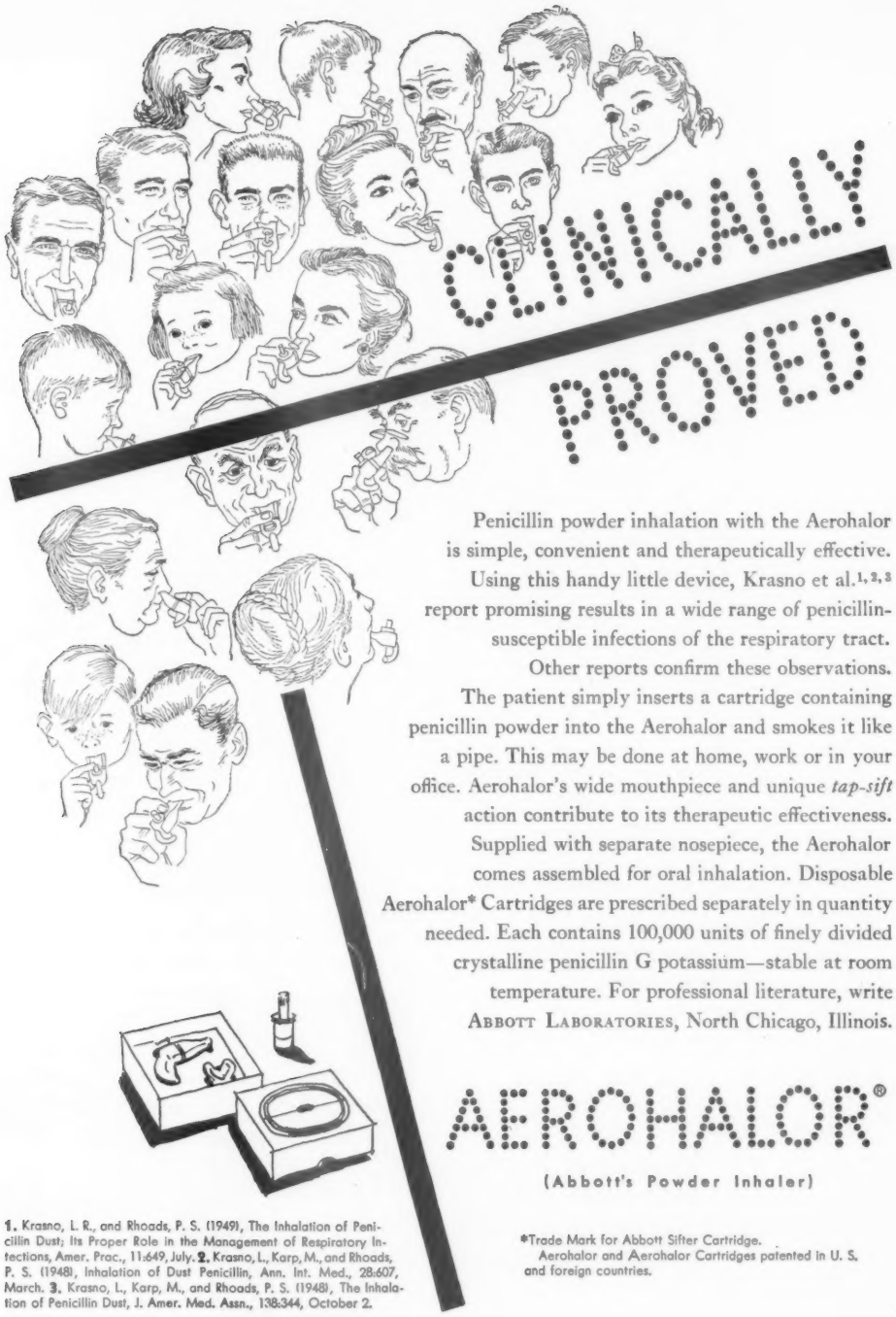

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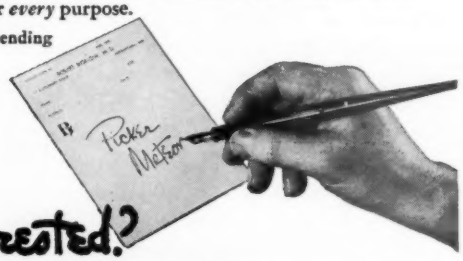

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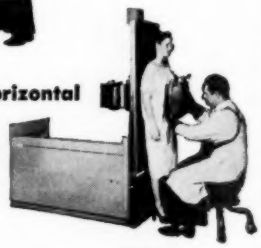

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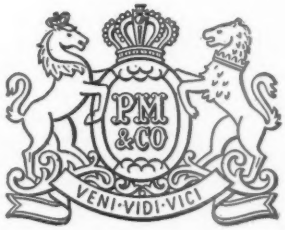

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AMERICAN MEDICAL WOMEN'S ASSOCIATION

VOLUME 5 JANUARY, 1950 NUMBER 1

The Adrenal Cortex

Patricia B. Tudbury, M.D.

I. PHYSIOLOGY

A GREAT DEAL of clinical and laboratory research concerning the functions of the adrenal cortex has been carried on in recent years. Much of the work is directly useful to the practicing physician, and all of it is of interest. Some of the more important findings will be summarized briefly.

Anatomical and Physiological Considerations

At present over thirty different hormones have been described as originating in the cortical tissue of the adrenal glands. The exact number is not known because it is questionable as to whether all of the hormones are distinct entities. These hormones are of three main types: (1) *The androgenic hormones* which have structural formulas and the physiologic effects similar to those of testosterone. These are excreted in the urine as 17-ketosteroids. (2) *Corticosterone, desoxycorticosterone, and related hormones,* all of which have structural formulas similar to progesterone. These substances regulate salt and water balance, and seem to be essential for survival. In the structural formulas of these there is no oxygen at the C-11 position. (3) *The 11-oxycorticosteroids, metabolic hormones* which affect the metabolism of protein and carbohydrate. These have an oxygen at the C-11 position.

A. Anatomic-physiologic Correlations

As is well known, the adrenal cortex is divided into three histologically distinct zones: the outer zona glomerulosa, the middle zona fasciculata, and the inner zona reticularis. Evidence has accumulated that these different areas have distinct physiologic functions. Baxter,[1] using intravitam stain, demonstrated higher mitotic rates in the outer two zones than in the inner zone; and Deane and Greep[2] showed that the outer two zones seem to be independent in their functions by noting that after hypophysectomy in animals there is a gradual disappearance of ketosteroids from the zona fasciculata, but a persistance of these hormones in the zona glomerulosa. It is believed that the zona fasciculata, under the influence of the pituitary adrenocorticotrophic hormone, secretes the hormones which regulate carbohydrate and protein metabolism. The zona glomerulosa is thought to produce the hormones concerned with mineral metabolism, and the zona reticularis to produce androgens.

B. The Adrenocorticotrophic Hormone

That the anterior pituitary, by means of its adrenocorticotrophic hormone, is important in controlling adrenal function is proved by atrophy of the rat adrenal cortex following hypophysectomy and its re-growth upon placement of anterior pituitary grafts. However, the exact mode of action of this hormone is not known. We do know that when the adrenocorticotrophic hormone is administered to patients with normally-functioning adrenals, two important physiologic changes occur: (1) There is a brief period of increased salt excretion, followed by marked salt retention. (2) The hormones controlling carbohydrate metabolism appear to be released in larger amounts than normal, causing increased gluconeogenesis, and depressing carbohydrate utilization. In fact, temporary diabetes mellitus can be produced by giving this hormone to normal people.

Dr. Tudbury was formerly Assistant Resident in Adult Medicine, Children's Hospital, San Francisco.

The Sayers,[3, 4] in a series of fundamental experiments on animals, concluded that the presence of adrenocortical hormones in the circulation inhibits release of the adrenocorticotrophic hormone, and that the degree of inhibition is proportional to the amount of circulating hormone. However, when an animal is subjected to stress, more adrenocortical hormone is required to inhibit the adrenocorticotrophic hormone, and the amount required is roughly proportional to the severity of the stress. White, Heinbecker, and Rolf,[5] working with inulin and diodrast clearances in dogs, concluded that the impairment of renal function which follows hypophysectomy is probably due to the loss of adrenocorticotrophic hormone.

The hypertrophy of the adrenal cortex which was noted by Tepperman, Engel, and Long[6] when they fed animals a high protein diet may be the result of increased production of adrenocorticotrophic hormone, for it has been shown that hypophyseal activity increases on high protein diets. However, other workers have failed to obtain this increase in adrenal size in animals on high protein diets. Noya et al.[7] suggest that these differing results may be explained by their experiments which showed that the adrenal hypertrophy occurred only under conditions such as stress or unilateral adrenalectomy which stimulate excessive adrenal growth. In these cases the high protein diets seemed to cause further increase in adrenal size, and the authors suggest that this may be due either to increased production of adrenocorticotrophic hormone or to the formation of a factor in the pituitary which acts synergistically with the adrenocorticotrophic hormone. D'Angelo et al.[8] noted increase in size of the adrenals proportional to the degree of weight loss in fasted guinea pigs, and concluded that this was due to excessive adrenocorticotrophic hormone secretion caused by starvation.

Anderson, Page and Li,[9] working with rats, produced a physiological state in which the rats were refractory to parenteral administration of adrenocorticotrophic hormone.

Sayers et al.[10] described a new method of assay of the adrenocorticotrophic hormone based on the fact that this hormone depletes the adrenals of the hypophysectomized rat of their ascorbic acid content.

C. Metabolic Effects of the Adrenocortical Hormones

There is a good deal of disagreement as to what is the principal function of the adrenal cortex. Some investigators hold that the control of electrolyte and water balance is of primary importance, and that the regulation of carbohydrate metabolism is only incidental to this major function. Others believe that the most important cortical activity is the control of carbohydrate metabolism. And recently it has been suggested by Long, Katzin, and Fry[11] that the main effect of the hormone may be on protein metabolism. The answer probably lies in the concept that all of these functions are important and interdependent to a certain extent.

1. Mineral Metabolism and Water Balance

The adrenal cortex has been found to be very important in regulating the distribution of minerals in the body. Closely related to this function is that of maintaining the water balance. The three principal elements whose distribution is governed by the adrenal cortex are sodium, potassium, and chlorine. These regulate the following functions of the body: (a) Acid-base balance—This depends mainly upon the sodium and chloride ions, since these ions respectively make up most of the base and most of the acid of the plasma and other extracellular fluids. (b) Hydration and osmotic pressure—This is regulated for the most part by changes in the concentration of sodium in the extracellular fluid. (c) Muscle irritability—The potassium within the cells and the sodium without are important, along with calcium and magnesium, in this function.

It must be emphasized that the adrenals are not solely responsible for the above physiologic processes, nor are disturbances in their function the most common causes of failure of these processes.

Clark[12] has presented evidence that sodium and chloride will not be absorbed from the intestine in adequate amounts when insufficient amounts of adrenal cortical hormones are circulating in the blood.

In addition to changes in absorption, adrenal insufficiency also results in abnormalities of excretion of the chemical substances under consideration. There is increased excretion of water, sodium, and chloride in the urine, and a compensatory decrease in the urinary excretion of potassium. These changes result in concentrations of sodium, chloride, and water in the serum which are lower than normal, and an abnormally high serum potassium due to the passage of potassium from the cells to the extracellular fluid to compensate for sodium loss. The hemo-concentration which results, in turn, produces cardiovascular-renal failure. Thorn, Engel, and Eisenberg[13] have carried on experiments which seem to show that these effects of adrenal cortical insufficiency originate in

abnormalities of the permeability of cell membranes throughout the body to sodium and potassium, and are not a result of deficiency of the hormone acting on the kidneys alone.

Changes in the chemical composition of rat muscle and plasma after adrenalectomy were studied by Conway and Hingerty,[14] and they found constant alterations due to lack of the adrenal cortical hormones. The potassium content of both skeletal muscle and plasma was increased, showing that high plasma potassium does not appear at the expense of the intracellular potassium, but that there must be increased absorption of this element. Magnesium also increases in both the cells and the plasma. Sodium, as would be expected, is present in reduced quantities in both cells and plasma. The phosphocreatine in the muscle and the total and inorganic phosphate in the plasma were increased.

The administration of excessive adrenal cortical hormone, of course, gives rise to chemical changes just the reverse of those occurring in adrenal cortical insufficiency. Green[15] studied the effect of desoxycorticosterone acetate on the blood pressure and water intake of rats. He concluded that the hypertension caused by overdosage with the hormone is probably not a direct action of the drug, but a mechanism to compensate for the marked disturbances in fluid and electrolyte balance produced by the hormone.

Birnie et al.[16] studied water intoxication in rats, and found that adrenal cortical hormones seem to protect against this state by causing diuresis, and that even in animals without kidneys the adrenal hormone afforded some protection.

Anderson[17] carried on fundamental investigations in an attempt to discover the relations between the adrenal cortical hormones and salt. She found that although salt in the proper amount will protect an adrenalectomized animal from many of the deleterious effects of the lack of hormones, it is not a completely adequate substitute for the hormones. She concluded that desoxycorticosterone has as its function to promote normal functioning of the body mechanisms which require salt.

In a recent article, Conn[18] described a simple test for determining possible changes in the production of the corticosteroids which regulate electrolytes and water by measuring the electrolyte composition of sweat. This article is especially recommended because it contains an excellent critical summary of all the methods now available for assessing adrenal cortical function.

A new rapid microcolorimetric test for the determination of the sodium content of biologic fluids has been described by Albanese and Lein,[19] and promises to be of value both in diagnosing and in following cases of adrenal cortical abnormality.

2. Carbohydrate Metabolism

As was mentioned above, there is some disagreement among biochemists and physiologists as to whether the adrenal's control of carbohydrate metabolism is not merely incidental to its regulation of protein metabolism or of water and electrolyte balance. Be this as it may, however, the role of the adrenal cortex in gluconeogenesis cannot be overlooked. Since different effects are obtained by the administration of adrenal cortical extract to fasting and non-fasting animals, it is possible that the primary importance of the hormone is in the adaptation of the body economy to adverse circumstances. In fasting animals, administration of adrenal cortical extract leads to increased gluconeogenesis and to increased utilization of tissue proteins. The former produces glycosuria, and the latter causes increased nitrogen excretion. In well-fed animals, on the other hand, administration of the extract leads to glycosuria, not because of gluconeogenesis, but because the rate of carbohydrate metabolism is slowed. This is proved by the fact that in this instance nitrogen excretion does not show the marked increase noted with the fasting animals. In both fasting and fed animals, glycogen is deposited in large amounts in the adrenal when adrenal cortical hormones are administered.

Talbot et al.[20] have identified 11-oxycorticosteroid-like substances in the adrenal secretion, and identified these as the excretory products of the S-hormones. The S-hormones appear to be the fractions which promote sugar formation from proteins and glycogen deposition, and also aid the body in adapting to unusual stress. Because they promote the breakdown of proteins into carbohydrates, they are considered by Albright to be "anti-anabolic," in contradistinction to the anabolic N-hormones, next to be considered. The mechanism by which the S-hormones prevent the utilization of sugar is the inhibition of hexokinase. Adaptation to conditions of stress is promoted by these hormones by their release of immune globulin, it is believed. The S-hormones are maintained at about the same level throughout life. Patients with Addison's disease, pan-hypopituitarism, and hypothyroidism excrete less 11-oxycorticosteroid-like substances than normal people, and an increased excretion is found in active Cushing's syndrome and in non-specific trauma. It is perhaps of practical significance that in normal patients S-hormone excretion increased when the sub-

jects were fed high protein diets, but did not increase when the protein was supplied in the form of intravenous blood plasma.

3. Protein Metabolism

The androgenic hormones of the adrenal cortex are those which act to cause the laying-down of body proteins. The excretory products of these hormones, named "N-hormones" by Albright,[21] are the 17-ketosteroids of the urine. The N-hormones are anabolic, and also have to do with the presence of the secondary sexual characteristics. Unlike the S-hormones, the N-hormones are not maintained at the same level throughout life. They appear at about the time of puberty and disappear in later life, usually quite a number of years after the menopause.

Albright has made an outstanding contribution to clinical medicine by his study of the etiology of osteoporosis. He calls attention to the fact that osteoporosis (which is not to be confused with osteomalacia) is primarily a derangement of tissue metabolism, not of minerals. It is due to a decreased formation of the bone matrix, osteoid, by the osteoblasts; but that matrix which is formed is calcified normally. The production of bone matrix is dependent upon the availability of nitrogenous substances, and this in turn is dependent upon the presence of adequate N-hormone and gonadal hormone.

Testosterone and estrogen may stimulate osteoblasts either directly or through inhibition of the anti-anabolic S-hormone. Osteoporosis of old age is due partly to loss of the N-hormone and partly to loss of the gonadal hormone. The condition in either sex will respond both to testosterone and to estrogen therapy. Post-menopausal osteoporosis, due to decreased estrogen, can also be treated with either testosterone or estrogen. On the other hand, the osteoporosis which appears during adrenocorticotrophic therapy of pan-hypopituitarism, in Cushing's syndrome, and in the adaptation syndrome of Selye, is due to excessive production of the anti-anabolic S-hormone. These conditions all respond to testosterone which appears to cause decreased production of the S-hormone. Albright calls attention to the fact that the administration of calcium alone to persons with osteoporosis may be dangerous, in that it leads to the formation of renal calculi, since without the N-hormone or gonadal hormone, calcium will not be deposited in the bones.

Albright believes that serum albumin is one of the essential nitrogenous building-blocks for bone matrix, and cites as supporting evidence for this the fact that in pregnancy, a state characterized by low serum albumin, already-existing osteoporosis is sometimes made worse. In these cases, the abnormally high output of calcium in the urine can be decreased by treatment with intravenous serum albumin. Oral serum albumin is ineffective in this condition.

So many studies on 17-ketosteroid excretion have appeared in recent years, that it is impossible to discuss all of them. Normal values for the 17-ketosteroids are 5 to 15 mg. per day in women, and 7 to 20 mg. per day in men. 17-ketosteroids can be separated by chemical means into alpha-alcoholic, beta-alcoholic, and non-alcoholic fractions, the alpha-alcoholic fraction usually making up 85 to 95 percent of the total in normal subjects. This division into fractions is valuable clinically in differentiating types of disorders. For example, carcinoma of the adrenal cortex is characterized by very high values for the beta-alcoholic and non-alcoholic fractions, while in simple hyperplasia of the cortex these values are only slightly increased, if at all.

Forbes et al.[22] studied 17-ketosteroid excretion in 66 patients during various medical or surgical conditions. They found that in patients who had been normal shortly prior to an acute illness, the excretion generally rises for 1 to 3 days and then falls until convalescence is reached, at which time it returns to normal. In chronically debilitated patients, however, the initial level is subnormal, and there is little if any response to superimposed acute illness. The authors conclude that changes in function of the adrenal cortex are an integral part of the adaptation syndrome of Selye. Landau and co-workers[23] noted a decrease in 17-ketosteroid excretion during starvation, and they suggest that starvation is a factor frequently found during illness, which may contribute to the lowering of the 17-ketosteroid output in disease.

Venning and Browne[24] compared 17-ketosteroid excretion with excretion of the 11-oxycorticosteroid-like S-hormones in patients with various endocrine disorders, and noted that these two excretory products may vary independently. For example, in active Cushing's syndrome the glycogenic corticoids are greatly increased and the 17-ketosteroids are normal, while in cases of "simple hirsutism" in females they found increased 17-ketosteroids with normal S-hormone. As the authors point out, simultaneous determinations of these two factors, which could be made on the same urine specimen, would be valuable in differentiating organic lesions of the adrenal and the pituitary. The same authors in another paper[25] note that testosterone therapy leads to a decrease in both glycogenic corticoids and 17-ketosteroids in the urine. They

consider this to be due to decreased adrenocorticotrophic hormone production in response to the testosterone.

For some time it has been suspected that adrenal activity and urate metabolism are connected. Robinson et al.[26] studied urate metabolism in gouty and in normal patients during administration of adrenocorticotrophic hormone, and noted distinct differences. They suggest that the varieties of incidents which cause acute attacks of gout are all similar in that they affect pituitary-adrenocortical balance, principally by depression of the adrenal activity. Wolfson and his colleagues[27] measured the 17-ketosteroid output in cases of gout, and found that it is decreased in this condition, but not in patients with idiopathic hyperuricemia or in males with rheumatoid arthritis. Since renal, liver, and androgenic function was normal in these cases of gout, the authors conclude that in gout biologic androgen activity is maintained by an androgenic hormone which does not contribute to the urinary 17-ketosteroids.

Thirteen males with ankylosing spondylarthritis were found by Davison, Koets, and Kuzell[28] to have an average daily 17-ketosteroid excretion of 27 mg., a figure significantly higher than the normal daily average of 14 mg. In this connection, it might be mentioned that as this paper goes to press, an important new discovery is announced of the therapeutic efficacy of Compound E in rheumatoid arthritis. If subsequent work shows this substance (extracted from adrenal cortex) to be as effective and as non-toxic as it is now believed to be, it may well prove the outstanding medical discovery of the current year. It is as yet obtainable in very small amounts for experimental use only.

D. Immunological and Hematopoietic Functions of the Adrenals

Many workers have produced evidence that the adrenal cortical hormones cause the discharge of lymphocytes from the spleen into the general circulation. If rats are subjected to stress by being forced to swim, an absolute lymphocytosis results. However, if the adrenals are removed, the lymphocytosis is much less marked. When adrenal cortical extract is then given to these adrenalectomized rats, they again exhibit a lymphocytosis in response to stress. Elmadjian et al.[29] called attention to the fact that the prompt lymphocytopenia seen when glucose is given to normal rats does not occur in adrenalectomized animals. The same authors[30] note that in normal patients undergoing the glucose tolerance test, the lymphocyte count varies inversely with the level of the blood sugar. Despite the above work, there is disagreement about the function of the adrenal cortex in calling forth lymphocytes in normal human beings. Forsham, Thorn, Prunty, and Hills[31] noted neutrophilia after the injection of adrenocorticotrophic hormone in normal persons, but consider this a non-specific effect.

The importance of the changes in the lymphocyte level has been made clear by Dougherty and White in their many excellent papers.[32, 33, 34, 35] As they point out, there are two important steps in the immune reaction which may depend upon the adrenal cortex. The first is the synthesis of gamma globulins, and this occurs in the lymphocyte. The second is the release of the antibodies into the blood stream upon dissolution of the lymphocytes. They found that increased activity of the adrenal cortex, especially of 11-oxysteroid type secretions, caused a lymphopenia and nonspecific rise in the polymorphonuclear leukocytes in animals. Later, histological degenerative changes in human lymphoid tissue were demonstrated in association with increased 11-oxysteroids. However, as Craddock et al.[36] and Kelley and Adams[37] point out, no rise in serum gamma globulin or augmented antibody response has followed administration of adrenocorticotrophic hormone to normal adults or children. This immunological study bears further investigation, for it can easily be seen that it might lead to revolutionary changes in present-day methods of immunization.

Another important contribution was the observation of Forsham, Thorn, Prunty, and Hills[31] that the eosinophils of the blood vary with and are indicative of adrenal cortical activity. Compound F, an S-hormone, acts to decrease the circulating eosinophils. In a later paper,[38] they suggest a test for adrenal cortical insufficiency based on the decrease in eosinophils which occurs in normal persons in response to adrenocorticotrophic hormone. This fall does not occur in patients with Addison's disease. Epinephrin may be substituted for adrenocorticotrophic hormone in this test. Stein et al.[39] noted decreased eosinophils in human beings subjected to extremes of temperature and exertion.

An additional measurable quantity which may be useful in the diagnosis of adrenal cortical insufficiency, according to Thorn et al.[38] is the uric-acid-creatinine ratio of the urine. In a normal person there is an increased uric acid excretion after the administration of adrenocorticotrophic hormone. This does not appear in patients with adrenal cortical insufficiency.

E. The Role of the Adrenal in Adaptation to Stress

It has been observed by many workers that when animals are subjected to different types of stress such as extremes of temperature, over-exercise, high altitude, and trauma, their adrenals rapidly become hypertrophied. That this is due to increased demand of the body for adrenal cortical hormones seems to be proved by the fact that the adrenal hypertrophy in animals under stress can be prevented by the administration to them of adrenal cortical extract. The gross change in the adrenal is paralleled by histological changes which are evidently the result of increased secretory activity. These have been found both in patients dying from severe infections, and in those dying a few days after injuries such as crushing and burns. In such cases the adrenals are also hypertrophied. The histological changes are primarily in the zona fasciculata, and consist of necrosis of the cells and edema which dissects apart the cells of a cord to form a structure resembling a renal tubule, named by Rich[41] a "pseudo-tubule."

Sayers et al.,[42] Long and Fry,[43] Levin,[44] and Popjak[45] have shown that there is marked decrease in the cholesterol and ascorbic acid content of the adrenals after stress. The cholesterol of the gland is thought to be the precursor of the adrenal steroid hormones. Its fall is explained by the fact that during stress this substance is being changed to adrenal cortical hormone more rapidly than normal in order to satisfy increased demands for the cortical hormone. It has been shown that these changes are mediated by the adrenocorticotrophic hormone of the pituitary. Fall in cholesterol and ascorbic acid content of the gland during stress can be prevented by the administration of adrenal cortical extract.

The above findings would indicate that extra adrenal cortical hormones are required by the body during stress, but that the production of large amounts of these over a period of time is deleterious to the gland itself. Thus it seems that adrenal cortical extract would be beneficial to patients likely to have difficulty in withstanding severe infection or injury. It has been proved in animals that stress is better tolerated with adrenal cortical extract, but this is a more difficult point to prove in human beings. In the interim, it would seem worthwhile empirically to try rather large doses of adrenal cortical extract as a supportive measure in patients who are undergoing severe stress. At least 10 cc. a day of the aqueous extract or its equivalent in the oily medium should be given. These materials are somewhat expensive.

Summary

Some of the important recent developments in our knowledge of adrenal cortical physiology have been discussed. A forthcoming review will summarize the application of this knowledge in clinical conditions involving the adrenals.

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Roentgen Visibility of the Thymus

M. J. Sherman, M.D.

WHAT IMPORTANCE may be attached to that oft disputed organ, the thymus? Most mothers of young infants still stand in terror of this word, which to them spells sudden death by suffocation. This places the difficult job of reassuring distraught parents upon the shoulders of the pediatrician or family physician, who in turn must depend upon the radiologist, for the diagnosis of thymic size in the living child is primarily roentgenological. In addition, only too often, the superior mediastinal shadow of the thymus, large or small, may be confused with pathological processes. Thus the problem of one small organ of unknown function often becomes a major matter in an institution or office where a large number of children are seen.

The medical literature and textbooks contain many discussions of the pros and cons of asphyxia secondary to tracheal obstruction by the thymus. Carr,[2] in a recent comprehensive review of the literature and study of autopsy material, has pointed out that status thymicolymphaticus is not a legend, but a definite entity. However, as an infrequent cause of sudden death in children, it assumes a role of secondary importance. It is indeed unfortunate that no ante-mortem radiographs of children dying of a truly enlarged thymus are available, so that the picture of a thymus enlarged to such a degree is unknown. Yet many chest examinations on infants reveal wide superior mediastinal shadows. Consequently, the radiologist has found it necessary to set arbitrary standards of abnormality, and undoubtedly many shadows that are actually within limits of normal are called enlarged.

One should therefore seek an answer to the following questions: (1) What is the roentgen picture of the thymus in the various projections and stages of respiration, especially as opposed to pathological processes? (2) Is the mere presence of a shadow of the thymus on a radiograph abnormal? (3) Is one justified in using roentgen therapy in the presence of a prominent thymus?

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Caffey[1] has diagrammed the various shapes the thymic shadow may assume on a radiograph, particularly in the anteroposterior projection. In a recent excellent contribution to the British literature, Kemp, Morley, and Emrys-Roberts[5] have emphasized the triangular sail-like projection from the superior mediastinum, which they proved to be thymus by means of post-mortem radiographs taken with metallic clips placed on the poles of the gland at autopsy immediately after opening the thorax.

To review the usual appearance of the gland: One may see either unilateral or bilateral projections from the superior mediastinum. These projections may be either rounded with the convexity laterally, or shelf-like with the apex of a triangle seen laterally. The inferior border of the gland may reach anywhere from the hilar regions to the diaphragm. When the projection is rounded, demarcation from the cardiac border is usually seen as a slight inward angulation in the contour of the combined shadow. Occasionally, the rounded lobes blend into the cardiac border completely, so that the combined shadow may be mistaken for enlargement of the heart or abnormalities of the great vessels. With a shelf-like projection demarcation becomes more obvious, the thymic shadow being differentiated from that of the heart as a linear density extending over the lung for varying distances.

In addition, I should like to emphasize the importance of the appearance of the thymus in the lateral projection. The shadow of the thymus is normally seen to fill the anterior-superior mediastinum, even when the gland is hardly visible in the anteroposterior projection. It replaces the usual radiolucency of the lung seen anterior to the heart-vessel shadow in older children and adults. When the thymic shadow appears as a rounded density in the anteroposterior projection, the inferior border of the gland is as a rule difficult to visualize in the lateral film. It may be seen as an area of relatively increased density with a convex inferior margin overlying the superior portion of the cardiac shadow. When, however, the thymus is shelf-like in shape as seen in the

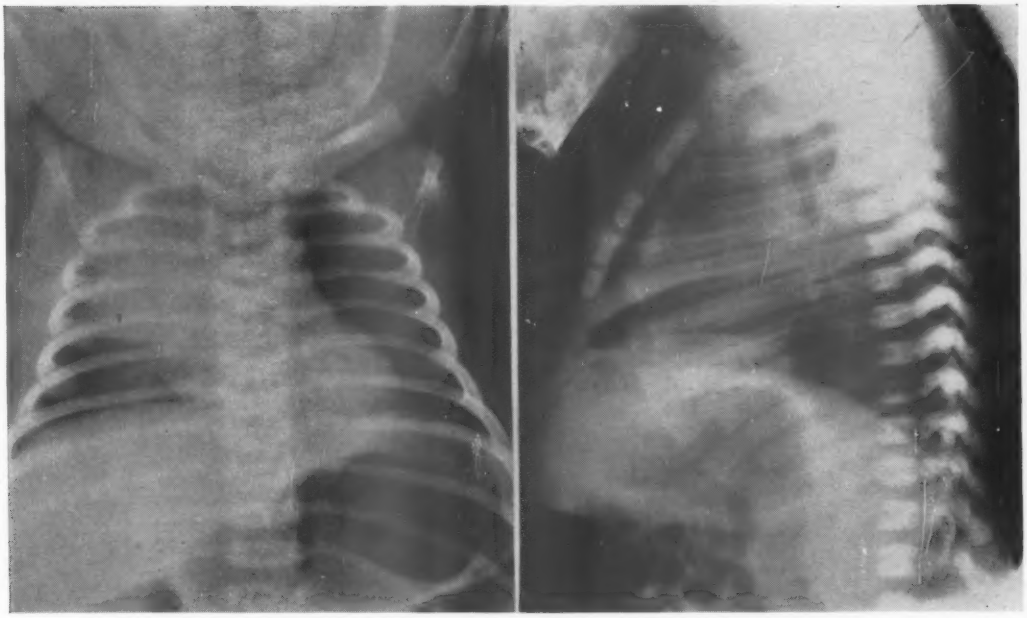

Fig. 1. Female, age one month, with no symptoms. The pre-operative (hare-lip repair) chest radiograph revealed a shelf-like right lobe of the thymus. Note the characteristic appearance in the lateral projection, which may simulate consolidation or effusion above the minor fissure.

anteroposterior film, one almost always notes a characteristic appearance in the lateral film. A sharply defined shadow, convex superiorly, is seen to extend backward from the anterior chest wall, crossing the shadow of the heart, and reaching the hilar regions. This appearance simulates consolidation or effusions above the minor fissure. Confusion is especially apt to arise when the right lobe of the thymus is sufficiently prominent to extend nearly to the lateral chest wall, as seen in the anteroposterior projection. The importance of this becomes immediately obvious in the differential diagnosis of right upper lobe atelectasis, pneumonia, or mediastinal effusion from the shadow of an organ normally present.

Although tracheal compression as seen in a lateral film has often been discussed, we have not been able to demonstrate it in a true lateral projection. Expiration and slight obliquity of the patient both give the impression of narrowing falsely.

The appearance of the thymus should always be evaluated in anteroposterior and true lateral films taken in full inspiration, and supplemented by fluoroscopic observation, where one may note the mediastinum at the height of inspiration, as well as detect changes of shape during the various phases of respiration. The thymus is normally seen as a much more prominent shadow in expiration, while most pathological processes change little with respiration (except, of course, the mediastinal shift of atelectasis). By observing the barium filled esophagus, whose course is unaffected by the thymus, we may be helped in differentiating cardiovascular abnormalities from the thymus.

Where facilities are available, posteroanterior teleoroentgenograms made in the erect position may be even more accurate in depicting mediastinal contents.[7] However, in as much as standards of normality have been set for anteroposterior projections, and, perhaps even more important, the erect posture is not normal for an infant, I wonder at the rationale of making such films.

Recently, I had the opportunity, in conjunction with another study,[8] of examining the chests of 80 infants from Children's Hospital Well-Baby Clinic. The children ranged in age from 2 days to 12 months. There was no selection as to race or sex. All were completely asymptomatic, well-nourished infants with no evidence of disease on physical examination. Their electrocardiograms were all considered to be within normal limits. Fluoroscopic

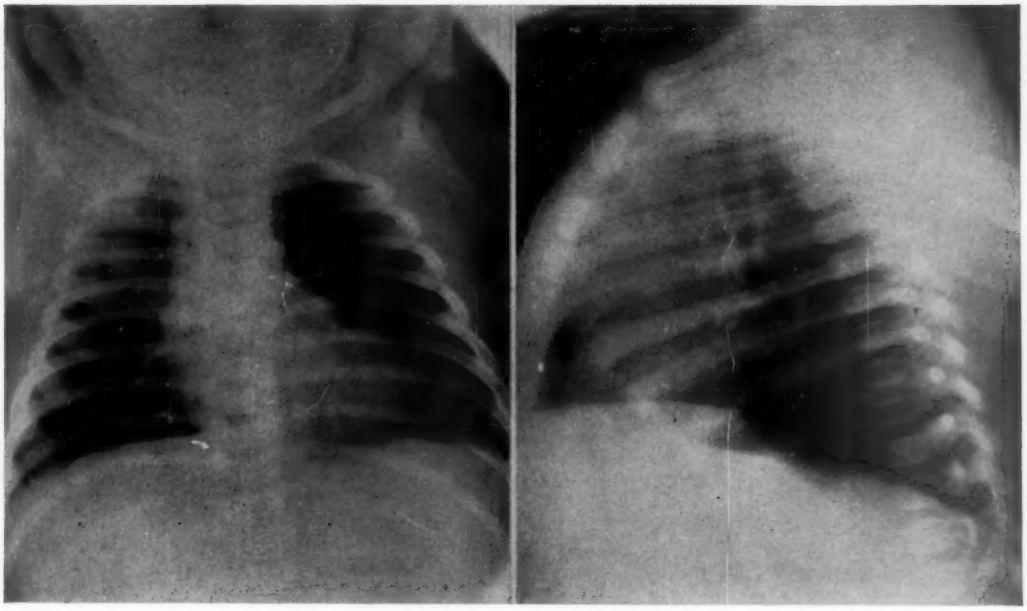

Fig. 2. Same infant, age two months. Chest radiograph was made three weeks after radiation therapy to the superior mediastinum. Note the barely visible right lobe of the thymus in the anteroposterior projection, and distinct, but less dense shadow in the lateral projection.

observation in all projections with barium in the esophagus was undertaken. After ascertaining in each case that the heart and lungs had a normal fluoroscopic appearance, the superior mediastinum was studied in inspiration to determine the number of infants who had visible thymic shadows, and the relative size of the shadow, when visible. Shadows were considered large when one or both lobes reached, or nearly reached, the anterolateral thoracic wall; moderately prominent when one or both lobes reached approximately into the mid-lung field; and slightly prominent when one or both lobes were seen as slight, but definite, projections from the superior mediastinum. The findings are outlined as follows:

1. Forty-one with visible thymic shadows (51.25 percent).
   (a) 3 large shadows (3.75 percent).
   (b) 12 moderately prominent shadows (15 percent).
   (c) 26 slightly prominent shadows (32.5 percent).
2. Thirty-nine without visible thymic shadows, except as fullness in the anterior-superior mediastinum in the lateral projection (48.75 percent).

If these 80 cases may be considered to be representative, thymic visibility per se cannot necessarily be considered abnormal. Short time follow-up (3 to 9 months) on the fifteen infants with large or moderately prominent shadows showed that none subsequently acquired any respiratory symptoms, and that all were showing normal growth and development.

A review of 23 cases placed in the teaching file because of good demonstration of thymic shadows was also undertaken. Of these, 10 were asymptomatic infants whose chests were examined as part of routine pre-elective surgery study, or prior to adoption proceedings. Among these 10, there were three large shadows (Fig. 1 and 2), six moderately prominent shadows, and one slightly prominent shadow.

Seven of the 23 infants had records of respiratory symptoms often attributed to thymic enlargement, i.e. respiratory stridor, apparent dyspnea, or intermittent cyanosis not attributable to any other cause. Among these there was one large

Fig. 3. Male, age two months. This infant had dyspnea and intermittent cyanosis in the face of negative physical and laboratory findings. Note the large shelf-like right lobe and rounded left lobe, which forms an angular indentation just above the apex of the heart. The lateral projection again demonstrates the characteristic inferior border of the shelf-like lobe. There was clinical and radiological improvement 18 hours after radiation therapy.

thymic shadow in an infant with severe dyspnea and cyanosis, and no positive physical findings (Fig. 3). Five shadows were of moderate size, and one was just visible as bilateral shelf-like projections from the superior mediastinum. In none was any tracheal compression demonstrated in the lateral projection. The six with the large or moderately prominent shadows received roentgen therapy to the superior mediastinum, one to three treatments of 50 to 75 roentgens (in air) being given at weekly intervals through ports 7 to 10 cm. in diameter. The radiation had a half value layer of 1.27 mm. of copper. Clinical and radiological improvement was recorded in all at final observation three weeks after the last treatment.

In six cases, no history was available. All showed moderately prominent shadows.

Finally then, is roentgen therapy a justified procedure in patients with prominent shadows of the thymus, with or without symptoms? There is little doubt as to its value in the rare case of true enlargement of the gland, but the borderline cases present a difficult problem. With so much emphasis on malignant conditions produced by radiation in atomic energy studies, the question of the safety of the procedure has arisen. Kaplan[3, 4] has shown that lymphoma-susceptible mouse strains (C57 black) exposed to large doses of total body radiation regularly developed lymphoid tumors which made their first appearance in the thymus gland, with secondary spread elsewhere. However, as yet, there is no proof that this data can be applied to man. As far as is known, there has been no study of animals receiving small doses of radiation locally to the thymus. Very little follow-up information is available on children who have received roentgen therapy to the thymus. Kirley[6] followed 27 children who had received three to eight treatments of 35 roentgens each to the thymus for periods varying from two to 11 years. All showed normal mental and physical development. All other radiologists questioned could cite no example of harm following radiation to the thymus in small doses.

Therefore, it is probably safe to give 50 to 75 roentgens to a thymus demonstrated by adequate roentgen examination to be prominent. The dose may be repeated once or twice, using as a rule radiation with a half value layer of approximately

1 mm. of copper. One or more of the following indications should be present:

1. Obstructive respiratory symptoms (stridor, dyspnea, intermittent cyanosis) not attributable to any other cause, especially if the pediatrician or parents are greatly alarmed about these symptoms.

2. Extreme fear on the part of a parent whose asymptomatic infant has a large or moderately large thymic shadow.

3. As a differential diagnostic aid in that rare case where clinical and roentgen examination cannot distinguish thymus from other pulmonary or mediastinal shadows. Radiation will at least temporarily shrink the thymus, while other densities (excepting sensitive lymphoid tumors) change little in appearance.

Summary

The usual roentgen picture of the thymus has been briefly reviewed. Convex or shelf-like projections from the superior mediastinum with the inferior borders reaching anywhere from the hili to the diaphragm are seen. Marked variation in size with no particular relationship to symptoms has been found. With one exception, the largest shadows seen at Children's Hospital have been in asymptomatic infants. Fifty-one percent of a series of well babies had distinctly visible thymic shadows.

If one remembers the usual picture of the thymus, differential diagnosis from abnormal processes is as a rule not difficult. If this should be forgotten however, it is easy to confuse the visible thymus with pneumonia, atelectasis, effusion, cardiovascular anomalies, and paratracheal or hilar adenopathy.

Roentgen therapy remains a controversial subject and should be used only when there are clear cut indications. As far as is known, small doses to the thymus are not harmful.

Conclusions

1. The thymus is normally visible as a distinct superior mediastinal shadow in over half of asymptomatic infants under one year of age.

2. The gland shows wide variation in size with no necessary relationship to symptoms.

3. Roentgen therapy, judiciously given to a select number of patients, cannot be considered harmful at the present time. Mere roentgen prominence of the gland per se is definitely not an indication for roentgen therapy.

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Congenitally Aplastic Ovaries

Minnie B. Goldberg, M.D.

THE PURPOSE OF THIS PAPER is to disseminate more widely knowledge of a new syndrome described variously as ovarian dwarfism, ovarian agenesis, ovarian aplasia, or the syndrome of rudimentary ovaries. Although the number of cases recorded in the literature since 1942, when the syndrome was first recognized, is still under 100, the condition is not so rare as the paucity of reports would indicate. It is the hope of the author that the following illustrative case report and the discussion to follow will result in more accurate differential diagnosis so that patients presenting this syndrome will be spared useless, expensive, inappropriate therapy and at the same time will not be denied the benefit of indicated treatment.

Case Report

B. G.* was first seen on July 28, 1930, when 14 years old, because she was small for her age. All the members of her family were of normal height and well developed. The patient weighed 5¾ pounds at birth and was short. She developed fairly normally, though slowly, up to the age of 8 years, following which there was apparent cessation of growth. She had bronchopneumonia at 6 months, adenoidectomy at 18 months and again at 3 years, and adenotonsillectomy at 6 years. She suffered from recurrent otitis media with a chronic purulent discharge from the left ear as well as from the nose. She had measles at 7 years and mumps at 11. Her mental and psychological development were normal and her school record was good.

At the age of 14 years, her height was 47½ inches and weight 62 pounds (Fig. 1). She was a short, well nourished, stocky child with facies corresponding with her chronological age. The span was relatively large for her height, no doubt because of the broad shoulder girdle and broad, bulging chest. The upper and lower body segments were approximately equal. There was no webbing of the neck, though it was short, and no increased carrying angle of the arms (Turner's syndrome).[1] The musculature was well developed but not excessive, while subcutaneous fat which was present in more than the average amount was uniformly distributed. The skin was normal except for a peppering of pigmented moles over the face. There was a moderate growth of hair on the arms and legs. The eyebrows were scant in the lateral aspects. The secondary sex characteristics were entirely lacking. There was no pubic or axillary hair nor any breast development. The external genitalia were infantile, and on rectal examination only a tiny undifferentiated mass, lying centrally in the broad ligament, could be palpated. The general physical findings were otherwise normal except for a chronic inflammatory condition of the left ear. The blood pressure was 84/60.

Laboratory Data: Urinalysis, blood count and blood serology were negative. The basal metabolic rate was plus 14 percent, and the glucose tolerance curve was relatively flat. The skull roentgenogram was negative; and the osseous development was determined by x-ray examination to be that of 14 years.

The diagnosis as of that date (August 1930) was hypophyseal infantilism. From August 1930, to August 1935, therapy included the various anterior pituitary products which were then appearing on the market: luteinizing, hormone, follutein, Squibb's anterior pituitary solution (supposedly containing growth hormone), Parke Davis' anterior pituitary growth hormone, as well as desiccated thyroid and anterior pituitary substance given orally. During this 5 year period the patient grew approximately 4 inches, reaching a height of 51⅝ inches and a weight of 87 pounds. The secondary sex characteristics were still lacking, though a small amount of fair pubic and axillary hair had appeared. On rectal examination, a tiny structure in the center of the broad ligament, presumably uterus and cervix, could be felt. The ovaries were not palpated. The osseous development at 19 years was still approximately that of a girl of 15 years.

It might be mentioned at this time that estrogenic therapy during the entire period of treatment was studiously avoided for fear of closing the epiphyses before any significant increment in height had been achieved. The 5 year period of therapy had been productive of so little improvement that the patient left the clinic and did not return until she was recalled 10 years later when the syndrome was better understood.

At the age of 29 years 8 months, her height was 52½ inches and weight 88 pounds (Fig. 2). As is evident from the photograph, secondary sex characteristics were still lacking though mammary fat pads gave the appearance of slight breast development. Peritoneoscopy failed to reveal the presence of pelvic organs although vaginal inspection disclosed a tiny cervix, about 1 cm. in diameter, and on palpation a tiny nubbin of tissue, probably representing a uterus, could be felt in the midline.

Discussion

The syndrome under discussion, as illustrated by this case report, concerns a short-statured female with sexual retardation and primary amenorrhea. Up to 1942, it would have been reasonable and logical to assume that this combination of growth and genital retardation could be due only to primary pituitary insufficiency, if cretinism (in which

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*This case was included in the tabular presentation of 25 additional cases of ovarian aplasia reported by Lisser et al.[2]

sexual retardation is not the rule, but may occur) and severe nutritional disturbance could be excluded. However, in March, 1942, Varney, Kenyon, and Koch's[2] report of four cases of short, sexually immature girls, whose urinary gonadotrophin assays ranged from 200 to 500 mouse units per 24 hours, came as a veritable bombshell.

These figures for pituitary gonadotrophins are as high or higher than the usual range for castrates and about ten times higher than the range for the normal adult female. The increased output of pituitary gonadotrophins certainly could not be reconciled with a diagnosis of pituitary lack. What was the explanation for this perplexing and paradoxical finding? Turning to the older European literature, the authors uncovered seven autopsy records of short, sexually immature women, and made the astounding observation that in each of these cases, the ovaries had been either totally absent or represented by mere rudimentary strands or masses of tissue in which no normal ovarian epithelium was present. Despite the ovarian aplasia, the uteri, tubes, and vaginae, though small, were well formed. The hypophyses varied in size, but there were no lesions to explain the defect in growth. Thus was born a new syndrome, but what was its etiology? How could absence of ovaries lead to dwarfism when castration in childhood invariably produces tall individuals with disproportionately long arms and legs; and, conversely, precocious ovarian activity or hyperactivity leads to eventual shortness of stature? In November, 1942, Albright, Smith, and Fraser[3] reported 11 additional cases of syndrome, discussed the paradoxical nature of the findings and stressed the differential points between this syndrome and primary pituitary infantilism. The most important of these may be summarized briefly as follows: whereas the hypopituitary individual is a dwarf and tends to be weak and delicate, the ovarian aplastic individual is only stunted, reaching an average height of 55 inches, and is stocky and well nourished. Though both have infantile secondary sex characteristics, the girls under discussion do develop a slight growth of pubic and axillary hair, whereas the hypopituitary individual does not. This is probably attributable to adrenal cortical function. In ovarian aplasia, the osseous development tends to be only slightly retarded and the epiphyses eventually fuse; whereas in hypopituitarism the osseous development is greatly retarded and the epiphyses often never fuse. Osteoporosis is common in ovarian aplasia as are various congenital anomalies, such as webbed neck, cubitus valgus, coarctation of the aorta, etc. These are not common in hypopituitarism. The crucial point, however, is the absence of pituitary gonadotrophins in the urine of the hypophyseal infantilism patient and the high titer in the syndrome under discussion.

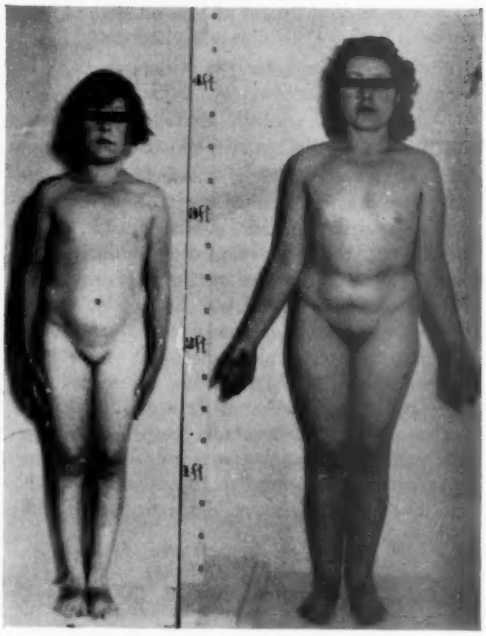

Fig. 1. B.G., age, 14 years; height, 47½ inches; weight, 62 lbs.; bone age, 14 to 15 years. Note the short stature and the absence of secondary sex characteristics.

Fig. 2. B.G., age, 29 years, 8 months; height, 52½ inches; weight, 88 lbs.; bone age, under 25 years, but epiphyses of all long bones are fused. Urinary gonadotrophins, greater than 384 mouse units per 24 hours. Normal is 10 to 50 mouse units per 24 hours.

Note the short stature, stocky build, sparse pubic hair, apparent slight breast development due to fatty tissue only, and the tendency to cubitus valgus.

In August 1944, Wilkins and Fleishmann[4] published a comprehensive review of the 32 cases which had appeared in the literature up to that time, exclusive of the 7 cases mentioned by the Russian author, Shereshevski,[5] and added 3 cases of their own. They called the syndrome Ovarian Dwarfism,* an unfortunate term since the individuals were neither dwarfs nor did they have ovaries. Furthermore, the designation implied (though this was not intended) that the absence of ovaries was responsible for the retardation of growth. Wilkins and Fleishmann emphasized the

*Correction: The responsibility for this term belongs to Varney, Kenyon, and Koch.

fact that, despite the absence of ovaries, the ductal system of these individuals was unmistakably female and concluded that the failure of the ovaries to develop normally was dependent upon a genetic factor. This conclusion was borne out by a study of the pathologic findings. The uterus and tubes were quite normal in delineation except that they were much smaller than those seen in the new-born female infant. The ovaries were represented by attenuated, elongated, glistening white structures which were appropriately described as "streak ovaries." Biopsy of these structures revealed the absence of germinal epithelium and primordial germ cells, and showed them to consist entirely of stroma. Apparently, the germ cells had failed to migrate into the gonadal anlage early in embryologic life.

The slow rate of growth manifested by most of these individuals (though not all) certainly cannot be attributed to the absence of normal ovaries. Wilkins and Fleischmann believe that this, too, is on a genetic basis. The frequent coincidence of other anomalies involving the skeletal and cardiovascular systems is a point in favor of this view. The occasional occurrence of normal height, or indeed actual tallness, in authenticated cases is a disconcerting finding.

In 1947 Lisser et al.[6] (the present writer being one of the co-authors) published the findings in 25 additional cases of the syndrome under discussion. The diagnosis was proved by exploratory operation or peritoneoscopy in six of these cases. One of these, a private patient of the author, was the youngest girl on record to be diagnosed clinically and the diagnosis verified by exploration. Nine cases were included on the basis of their clinical findings only. These are often so typical that the authors felt that the diagnosis can be made on clinical grounds alone, although the finding of a high urinary gonadotrophin titer is the crucial or convincing bit of evidence.

In 1947 there also appeared the report of del Castillo et al.[7] adding eight more cases, six of which were verified. To date no similar syndrome has been reported in a male.

The reader may now ask: Why such ado over a rare differential diagnosis? The answer is that logical, effective therapy and prognosis depend upon it. We are dealing with a congenital defect which results in two separate and distinct complaints: failure to attain normal growth, and failure to mature sexually. When a teen-age girl with these complaints presents herself, one may not airily assure the parents that everything will be all right, just give Nature a chance, this girl is just a little slow to develop. Nor is it legitimate to institute immediate therapy with pituitary gonadotrophins in the hope of inducing the menarche when the patient's own pituitary gonadotrophins are being produced in excess and when there are no ovaries capable of responding to the stimulation. What then is the outlook for these girls? It should be recalled that the average height achieved in this syndrome is 4 feet, 7 inches, that the osseous development is apt to be only slightly retarded, and that the epiphyses do fuse in time. A priori, it follows that if anything is to be accomplished in stimulating growth, it must be attempted before the bone age is too far advanced and the epiphyses fused. Unfortunately, either these girls do not seek treatment or the syndrome is not recognized until the bone age is far advanced and the epiphyses are almost if not entirely fused. Early recognition of cases is imperative. Time marches implacably on, and one cannot afford to temporize. The foregoing remains true despite the fact that steroid therapy to date has been disappointing in the production of acceleration of linear growth in the syndrome under discussion. What an effective pituitary growth hormone may accomplish, when and if it becomes available, is for the future to reveal. For the present, it is better for the patients and their parents to accept the fact that the probabilities of reaching normal height are slim but that the longer treatment is postponed the truer this is.

What about sexual maturation? First of all it must be understood that the failure of secondary sex characteristics to develop is directly dependent upon the absence of functioning ovarian tissue. Therefore, the logical treatment is substitutive estrogen therapy. Any estrogenic material given in full substitution dosage in cyclic fashion may be used. The author's preference is for stilbestrol given as follows: 1 mg. daily for the first week, 2 mg. daily for the second week, 3 mg. daily for the third week; and rest for the fourth week. Withdrawal bleeding usually occurs about the fifth day of omission and lasts four to five days. Treatment is resumed on the third day of bleeding. In our hands, this formula has been very successful in developing secondary sex characteristics and inducing regular cyclic withdrawal bleeding. The psychological value to the patient of normal breast and vulval development and apparently normal menstrual periods should not be underestimated. Marriage may thus be contemplated, though parenthood, of course, is impossible.

Recapitulation

In the case of a short-statured, sexually immature female the diagnosis of congenital absence or aplasia of the ovaries should be considered. If the patient is stocky and well nourished with a broad, shield-shaped chest and a short, possibly webbed neck, has sparse pubic hair and perhaps shows cubitus valgus or coarctation of the aorta, the diagnosis can be made on clinical grounds alone. When in doubt, the finding of a high titer of pituitary gonadotrophins in the urine* (100 mouse units per 24 hours or higher) is confirmatory.

Early recognition of cases is essential if growth is to be stimulated at all. So far, results in this phase have not been too encouraging. Substitutive cyclic estrogenic therapy can be depended upon to produce growth of secondary sex characteristics and regular cyclic withdrawal bleeding, both of which are of inestimable psychological benefit to the patient. Pituitary or chorionic gonadotrophic therapy is definitely contraindicated as it is unnecessary, uneconomical, time consuming, and most important of all, ineffective.

*Unfortunately this test is not widely available, but it can be made at most of the larger medical centers where research in hormonal activity is being carried on.

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Spinal Anesthesia in Vaginal Delivery

Virginia Pallais, M.D.

AT CHILDREN'S HOSPITAL, San Francisco, from July 1, 1948, to June 30, 1949, there were 2,020 vaginal deliveries. Low spinal anesthesia was used in 384 (19 percent) of these. It may be of interest to compare our experience with previous reports.

Rogers,[1] Haugen and Benson,[2] Andros et al.,[3] and Smale and Pallais[4] in the past 2 years have been strong proponents for low spinal anesthesia (saddle blocks) in obstetrics, and in Table I we compare their individual results with ours:

TABLE I

Spinal Anesthesia

	Rogers	*Haugen-Benson*	*Andros et al*	*Smale-Pallais*	*Author*
Operative Deliveries					
Primiparas	83.1%	69.0%	58.5%	93%	98%
Multiparas	—	56.3%	—	61%	—
Anesthetic Failures	—	5.03%	3.3%	4.7%	2%
Gross Fetal Loss	1.83%	1.8%	0.85%	3.2%	1.4%
Headaches	5-10%	7.2%	14.5%	7%	10%

Methods. The obstetrical anesthetic in our institution is administered by trained anesthetists, and that may account for the few failures, as compared to the other reports. Except for three cases in which metycaine 22.5 mg. was used, the drug employed was procaine, 50 mg. mixed with 1 cc. of 10 percent glucose.

The patient was usually seated, during administration and for 30 seconds after the injection, then laid flat on her back with a pillow under the head to keep the neck sharply flexed. A 22 gauge needle was used and when possible the puncture was made at the level of the fourth lumbar interspace. There were very few cases of severe drop in blood pressure, and these were easily relieved with oxygen and ephedrine or neosynephrine intramuscularly.

Listed as anesthetic failures were 7 patients (2 percent) who required supplemental inhalation for delivery.

Type of Delivery. The operative deliveries reached 98 percent in this series, which may seem high, but the overall incidence of operative procedures in vaginal deliveries is 85 percent at this institution.

There were 368 low forceps, 5 midforceps, 1 high forceps, 3 breech presentations, and 5 sets of twins delivered in this group. Spinal anesthesia gave adequate relaxation, and in difficult deliveries gave an added margin of safety to the infant by avoiding additional narcosis.

Postpartum hemorrhage occurred in four patients (1 percent), which compares favorably with the incidence of 1.5 percent for all deliveries for that year.

Fetal Mortality. One of the strong points for spinal anesthesia is that remarkably few babies require resuscitation. Practically all of the infants cry immediately upon birth, and many of them actually cry before they are completely born.

There were 5 infant deaths, or 1.4 percent uncorrected fetal mortality. Twins, weighing 2 pounds 9 ounces, and 2 pounds 10 ounces, respectively, failed to survive more than a few hours. A 3 pound 8 ounce infant died shortly after delivery and at autopsy was found to have polycystic kidneys. A 4 pound and 11 ounce infant died several days after birth from atresia of the jejunum; and a full term infant died during a traumatic delivery.

The gross fetal mortality for all deliveries during the same year was 2.6 percent.

Postspinal Headache. This is the only symptomatic disadvantage to spinal anesthesia. Once the delivery is over, should the patient unfortunately have a severe headache and learn that it is due to the anesthetic, she is a very unhappy person, as is the obstetrician who must try to relieve it.

We consider as a typical postspinal headache one which comes on usually 1 to 3 days postpartum, appearing or becoming worse on sitting or standing up and improved on lying down. Some of the descriptive terms used by the patient are: "feels like the top of my head is blowing off," "throbbing," "started as an ache between the shoulders, and crawls up my neck to the back of my head." The very severe headache may produce an actual meningismus.

For four months, November 1948, to February 1949, the writer followed the postpartum patient carefully, on the look-out for any complaint of

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headache without inquiring specifically for this symptom. During that time there were 11 typical postspinal headaches among 108 low spinals given for vaginal delivery (10 percent).

Although this discussion is on spinal anesthesia in vaginal delivery, it may be of interest to note that postspinal headaches were also recorded on cesarean section patients. During the same four months, there were 73 cesarean sections, and in six of these cases postspinal headaches developed (8.3 percent). The only apparent difference in administering spinal anesthesia for abdominal delivery is that the patient is in the lateral position. Therefore, the position of the patient is not the answer to this problem. Postoperatively, the patients are instructed to remain flat in bed for 8 to 12 hours, in the hope that this may help prevent headaches.

TABLE II

Post-Spinal Anesthesia Headaches (17 cases)

Duration			*Codeine-Aspirin*		*Caffeine IV*		*Nicotinic Acid*	
1 to 2 days	3 to 5 days	6 days+	Imp.*	Not Imp.	Imp.	Not Imp.	Imp.	Not Imp.
10	5	2	7	10	7	3	2	1

*Improved.

Table II shows that in the majority the headaches lasted about 2 days, and that out of 17 patients with postspinal headache, following both vaginal and cesarean deliveries, only two were still complaining of it on dismissal. Codeine and aspirin were all that were needed to relieve seven of the patients. Caffeine sodium benzoate, 0.5 Gm. intravenously, was next tried if the codeine and aspirin were not sufficient. Seven patients were improved for several hours following the injection, but in six of these it had to be repeated several times. Two patients obtained temporary relief following the administration of nicotinic acid, 50 mg., intravenously. Two patients were given hypertonic glucose intravenously with equivocal results. Unfortunately no single drug has been found which will give relief in every case.

Discussion

The increasing use of spinal anesthesia for obstetrics is justifiably accompanied by enthusiasm. It requires little time to give, and almost immediate relief is obtained by the patient. Drop in blood pressure is easily controlled by the experienced anesthetist and delivery is made easier for the obstetrician by the quiet following relief of pain, relaxation of pelvic floor, reduction in blood loss, and satisfaction in knowing that the baby is not receiving additional narcosis. Major procedures, as breech, mid and high forceps, and twin deliveries do not contraindicate the use of low spinal anesthesia.

The only unpleasant effect is the occasional persistent postspinal headache. It is hoped that in time the cause will be found, so that preventive measures may be taken. In the meantime, we are still searching for a specific cure.

Summary

A series of 384 vaginal deliveries in which low spinal anesthesia was used are reviewed for type of delivery, anesthetic failures, fetal loss, and postspinal headaches.

The advantages are many compared to the one disadvantage of postspinal headache in approximately 10 percent of cases. The majority of these headaches last only two days and respond to analgesics and caffeine given intravenously.

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Tuberculous Endometritis

Naoma D. Green, M.D.

A REVIEW OF CURRENT LITERATURE on the subject of pelvic tuberculosis, particularly tuberculous endometritis, has been occasioned by the recent unexpected discovery of this condition in a woman who is under treatment by the Clinical Service at Children's Hospital, San Francisco. In practically all instances where pelvic tuberculosis is found, unassociated with previously diagnosed tuberculosis in the body elsewhere, it is a surprise finding.

Sterility studies,[1,2] curettings, review of surgical specimens,[3] and endometrial biopsies[3] may reveal its presence. Symptoms may be vaginal discharge,[4] heavy pelvic aching or distress, amenorrhea,[4] or occasionally meno-metrorrhagia.[4] Tuberculous endometritis may, on the other hand, be present for a long period, perhaps years, with an entirely latent status, producing no symptoms whatsoever. At any time, under conditions difficult to predict, the process may become invasive and threatening to the health of the patient. Halbrecht[1] believes that curettage or insufflation of tubes may lead to a general spread of tuberculosis or to inflammatory tumors in the pelvis.

A careful search for the presence of tuberculous foci in the body outside of the pelvis is most often fruitless. It is generally believed, however, as presented by Williams[5] in 1893, that pelvic tuberculosis is rarely primary and that the most frequent route of infection is from the pelvic peritoneum to the uterine tubes, and thence to the endometrium, with the cervix being involved least often. The ovaries appear to be more resistant to invasion by the tubercle bacillus and are less often involved than the uterus.

Lahmann and Schwartz[6] state that pelvic tuberculosis constitutes 5 to 8 percent of all pelvic inflammatory disease, the involvement of the viscera in order of frequency being tubes 90 percent, endometrium 75 percent, ovaries 30 percent, cervix 5.5 percent, vagina and vulva only 0.5 percent.

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Cases of tuberculous cervicitis, which appear to be primary, have been reported;[2,6,7] and the direct route of vaginal contamination cannot be entirely overlooked.

The disease is usually found in women between the ages of 20 and 40 years with the average age reported by Jensen and McDonald[6] as thirty-four years. It is rare under 15 years of age.

Since the advent of streptomycin and its successful use especially in treatment of tuberculosis of other mucous membranes in the body, a careful re-evaluation of advocated methods of treatment for tuberculous endometritis seems to be indicated.

CASE REPORT

Mrs. H. K., 33 year old white housewife, was admitted to Children's Hospital, July 26, 1949, with the chief complaint of recurring profuse vaginal discharge and rectal bleeding. The principal findings were a cervical polyp filling the external os, and internal hemorrhoids.

Present Illness: Initial symptoms occurred at least as long ago as 1932, at which time and for a period of five years following, she was treated by another clinic for cervical erosion, trichomonas vaginitis, and other minor complaints.

She was first seen in Children's Hospital Clinics in May, 1948. Examination and punch biopsy at that time showed chronic cervicitis and mucous polyp of the cervix. She was treated by cautery with good healing and freedom from symptoms until the discharge recurred in March, 1949.

Menses usually have been regular, but in April and May, the patient was amenorrheic. The uterus was not enlarged and an Aschheim-Zondek test on May 18, 1949, was negative. Menses were re-established spontaneously and normal periods occurred on June 15 and July 13, 1949.

Sigmoidoscopic examination on March 30, 1949, revealed two large internal hemorrhoids at four and eight o'clock but was otherwise negative.

Family History was essentially negative. No familial diseases were known.

Past History: The patient lived in Pennsylvania until 3 years of age, and since then in California. She married at 22 years of age, and had two pregnancies with delivery at term, there were no known complications. One child is living and well, 11 years of age; one child died in infancy because of a congenital gastro-intestinal anomaly. Diseases; measles and mumps; no known serious illnesses; no operations or accidents.

System Review: Ear, nose, and throat: frequent head colds, teeth in poor condition. Neck: Cervical adenitis at 2 years of age, incised and drained. Cardio-respiratory: No symptoms, 35 mm. chest films two years ago and one month ago, reported negative. Gastro-intestinal: Occasional constipation, blood streaked stools. Genito-urinary: Negative, except for

vaginal discharge. Weight: 130 lbs.; no recent loss or gain.

Physical Examination: Well developed, well nourished 33 year old white female who did not appear ill. Significant findings were a 1 cm. scar at right supraclavicular fossa, a protruding polyp filling the external cervical os, and internal hemorrhoids at 4 and 8 o'clock. Pelvic and rectal examinations were otherwise entirely normal.

Laboratory Reports: Red blood cells, 4,240,000; hemoglobin, 98 percent; white blood cells, 9,200 polymorphonuclears, 79 percent; lymphocytes, 18 percent; eosinophils, 1 percent; monocytes, 2 percent. Urine: yellow, clear, acid, specific gravity, 1.013; albumin, none; sugar, none. Mocroscopic examination showed white blood cells, 0-1 high power field, calcium oxalate crystals, and epithelial cells.

Treatment: On July 27, 1949, dilatation and curettage and hemorrhoidectomy were done. The postoperative course was entirely uneventful.

Pathological report was "Tuberculous endometritis, mucous polyp of uterus, mid-interval phase endometrium, hemorrhoids." Description of the lesion found was as follows:

"In one of the fragments, the stroma near the free border contains a mass of large epithelial cells with pink-staining cytoplasm. They are arranged in whorls and enclose two giant cells of the Langhan's type. The mass is surrounded by a zone of massive lymphocytic infiltration." A photomicrograph of the lesion is given in Plate I.

Subsequent to this report x-rays of the chest and abdomen were taken and reported normal. Sedimentation rate was 16 mm. (Wintrobe). Mantoux test was negative in 1:10,000 dilution, but strongly positive in 1:1000 (O.T.)

* * *

In Staff Conference on this case a number of interesting points with reference to diagnosis, course, and treatment were brought out. The pathologist indicated that a positive diagnosis of tuberculosis should be substantiated by the finding of organisms in the tissue, or by guinea pig inoculation or culture from fresh endometrial tissue, but that other granulomatous lesions, such as Beck's Sarcoid or Coccidioides, which most closely resemble tuberculous granulomata, are highly improbable findings in endometrial tissue. Other yeast infections produce lesions readily distinguishable from tubercles.

The question of the proper treatment of a case such as that presented is a controversial one. Dr. H. Corwin Hinshaw, Professor of Medicine, Stanford University, presented the point of view of the internist with special experience in the field of tuberculosis. He advised general supportive measures and a conservative policy dependent upon the development of symptoms. In the absence of symptoms it was felt that perhaps no specific treatment was necessary.

Repeated endometrial biopsies to establish the presence or absence of tuberculous foci in the endometrium following the dilatation and curettage were advised by the attending staff.

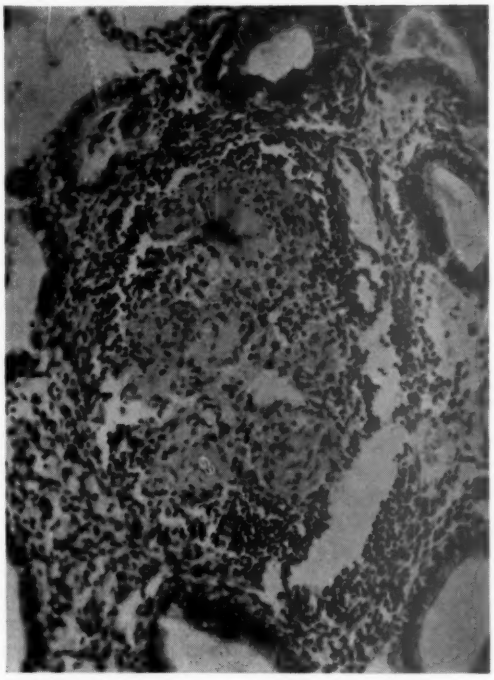

Plate 1. Endometrium showing granuloma.

In contrast with the conservative point of view a majority[2,6,8,10] of contributors to gynecologic literature in English and American journals during the last ten years recommend radical surgery, either alone or combined with small doses of x-ray postoperatively.

In the last year reports of the use of streptomycin have begun to appear. Prior to the incorporation of streptomycin as a factor in conservative or medical management, Jameson[6] reported a mortality rate 10 per cent higher with this method, as compared with surgical or x-ray treatment.

The presence of tuberculosis elsewhere in the body is thought to contraindicate surgery for pelvic disease and in such cases x-ray treatment, which was first introduced by Bircher[4] in 1908, has been used with convincing results by Campbell and colleagues at the University of Wisconsin.

The radical implications of either surgery or x-ray treatment for a patient in this age group, who is without any major symptoms, lead one to consider streptomycin as an alternate choice even though its administration must be continued for

a long period as in the treatment of tuberculosis in general. Schaupp[9] reported a cure with 0.5 Gm. twice a day for 58 days. Aranson and Dwight[12] used the same dose for 129 days with a complete cure.

Streptomycin, when given for such prolonged periods, is not without toxicity, and the patient should be under very close surveillance during the entire period.

Simple curettage may eradicate the lesion and effect a cure. Criteria of cure in cases reported were taken to be absence of microscopic evidence of tuberculous lesions, negative culture and guinea pig inoculation from endometrial biopsy specimens. Since the process is often asymptomatic, freedom from symptoms cannot be taken as indicative of cure.

Summary

A case has been presented which introduces the question as to the preferred treatment for asymptomatic tuberculous endometritis, not associated with tuberculosis in the body elsewhere. A review of current literature indicates that such treatment may be surgery, x-ray, a combination of the two, or more recently streptomycin. The majority opinion still favors surgery combined with x-ray. In our own group it is felt that with the advent of streptomycin more conservative treatment may prove to be equally satisfactory.

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Polyostotic Fibrous Dysplasia Albright's Disease

Jane Randolph Davies, M.D.

POLYOSTOTIC FIBROUS DYSPLASIA is a condition characterized by one or several bone lesions, usually unilateral in distribution, with or without the associated findings of pigmentation of the skin, premature sexual development, hyperthyroidism, or still other extraskeletal abnormalities.[4]

Prior to 1941 only 24 cases had been reported in the literature but since that time the condition has been described by many observers. The obscurity of the etiology and nature of the disease, however, still place it in the realm of medical oddities and prompted us to report this case, which went undiagnosed for many years.[4]

Case Report

Mrs. M. N., a 43 year old, white housewife was seen in the Children's Hospital Out-Patient Clinic with the complaint of a sharp stabbing pain in the posterolateral right chest, aggravated by caughing, exercise, such as mopping or lifting, and lying on her right side. There was no history of trauma. A chest x-ray revealed a lesion of the posterior eighth rib, described as "a destructive lesion . . . with expansion of the rib and marked calcification suggesting neoplasm, possibly metastatic." There was an old healed fracture of the same rib in the posterior axillary line. The patient was admitted to the hospital for further studies.

Past History: At 3 years of age, the patient fell down stairs, lacerating her chin. She attributed her facial asymmetry and proptosis of the right eye to this injury. At 36 years, a thyroglossal duct cyst was excised. At 42, she had a vaginal hysterectomy for profuse menorrhagia of 2 years duration. Menarche occurred at 13 with normal periods prior to this time. She had had seven full term pregnancies.

Physical Examination: The patient was a well developed and well nourished woman, appearing older than her stated age. There was slight proptosis of the right eye and prominence of the right supraorbital ridge as well as moderate prognathism. The mandible was more prominent on the right than on the left (Fig. 1 and 2). There was point tenderness over the eighth rib in the posterior axillary line. No abnormal skin pigmentation was observed.

Laboratory Studies: Routine blood examination and urinalysis were within normal limits. Bence-Jones protein was absent from the urine. There was no occult blood in the stool specimen examined. Serum calcium was 8.9 mg. per 100 cc., and serum phosphorus was 3.2 mg. per 100 cc. Serum phosphatase was 3.5 Bodansky units.

A skeletal x-ray survey revealed the following abnormalities. The right half of the mandible, the right maxilla, and the frontal and sphenoid bones all showed areas of dense, amorphous type of bony proliferation, alternating with areas of radiolucency. The involved bones were larger than the corresponding ones on the left (Fig. 3 and 4). The process had encroached upon the ethmoid, maxillary, and right sphenoid sinuses, partially obscuring them. Areas of rarefaction were noted in the lateral third of the right tenth rib with probable cystic formation in the left twelfth rib as well (Fig. 5 and 6).

From these findings a presumptive diagnosis of polyostotic fibrous dysplasia was made. A biopsy of the eighth rib lesion was done, however, to rule out metastatic carcinoma.

At operation the rib was found to be widened with thinning of the cortex. Tissue within the cortex was fibrous and avascular with areas of denser bone.

On microscopic examination the bone was seen to be almost completely replaced by fibrous tissue, which varied considerably in different areas. The bone lamellae were narrow and widely separated and some of the smaller ones were necrotic. There were occasional small areas of new bone formation (Fig. 7).

Discussion

The diagnosis in this case was made through the characteristic x-ray picture and bone biopsy findings. There were no extraskeletal features to aid in the diagnosis.

Most common of the extraskeletal manifestations is skin pigmentation, which has been reported in one-third of the cases. The pigmentation resembles the "café au lait" spots of neurofibromatosis, but unlike those of this condition the border is serrated. This prompted Albright to describe it as "Coast of Maine" in contradistinction to the rolling border of the lesion found in neurofibromatosis, which he described as "Coast of California."[1]

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

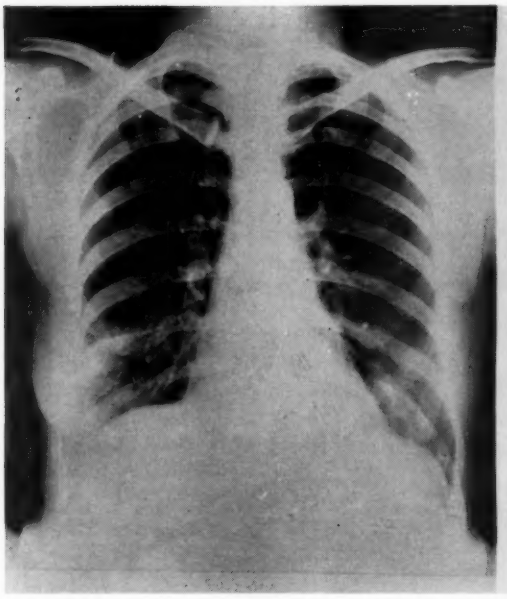

Fig. 5

Fig. 6

True precocity characterized by actual sexual maturation of the ovaries with ovulation, menstruation, and development of secondary sex characteristics occurs in about one-fifth of the patients.

Menstruation has begun as early as 2 years of age but usually not until 5 to 8 years. Male sexual precocity has rarely been described in this condition.[1]

Hyperthyroidism,[2] acromegalic features, and gynecomastia[3] are among other endocrine abnormalities reported.

There is no evidence of parathyroid dysfunction in this disease. The blood chemistry is usually not altered nor is the metabolism of calcium and phosphorus, although a moderate increase in blood phosphates and calcium has been reported during the active stage of the disorder. The inorganic phosphate level is not depressed nor is there an increase in calcium excretion in the urine.[1]

The central feature of the disease, present in all cases, is the bone lesion. The findings in our case were similar to those described in the literature. Bone lesions in this condition may be either monostotic or polyostotic and are predominately unilateral. The lesions are suggestive of those found in osteitis fibrosa cystica but differ from this condition in that the areas of bone between the cyst-like lesions are normal. Unlike true bone cysts the lesions are solid, consisting of a fibrous replacement with spicules of poorly formed bone and islands of hyaline cartilage (Fig. 7). The connective tissue may be composed of immature spindle-shaped cells with oval, pale staining muclei and pale cytoplasm and may be loosely arranged in whorls or may show areas of collagenous or myxomatous appearing tissue with cystic spaces. Occasionally nests of giant cells and rarely nests of foam cells have been observed.[4]

X-ray Findings: The skeletal changes as visualized by x-ray are variable. The lesion in the monostotic form of the disease may be indistinguishable from the solitary benign bone cyst or may present a distinctive loculated appearance due to bony trabeculation. The thinned cortex shows no evidence of periosteal growth of new bone or of resorption or erosion of the outer surface of the cortex seen in hyperparathyroidism. The epiphyses

are rarely involved, excluding the dyschondroplasias.

The appearance of the skull when involved is characteristic and, unlike the changes seen in the long bones, is one of sclerotic overgrowth. Hyperostosis is especially marked at the base of the skull.[3,4] (Fig. 4).

Symptomatology: Unless the disease is severe and associated with endocrine dysfunction, the onset is usually insidious and referable to the bony lesions. Pathological fractures frequently bring the condition to light, as in our case. Gross deformities, such as a coxa vara, may result. The lesions are frequently progressive during early life, becoming static in the adult. Involvement of the base of the skull may lead to proptosis, with compression of the optic nerve and visual impairment. Our patient, despite involvement of the orbit, escaped this complication.[1]

Etiology: Several theories have been suggested to explain the cause of this disorder, but no satisfactory explanation for the multiplicity of findings nor convincing pathological evidence has been submitted. Theories based on hormonal,[6] metabolic,[8] or systemic disorders[7] fail to explain the predominately unilateral distribution of skin and bone lesions. A neurological or embryonal explanation, as suggested by Albright and others, seems more tenable.[1, 2]

Differential Diagnosis: Because the manifestations of this disease are protean it must be differentiated from other conditions causing skeletal, endocrine, and skin changes. Among these are Von Recklinghausen's disease, bone tumors, the reticuloendothelioses, adrenogenital syndrome, and gonadal and hypothalamic disturbances.

Prognosis: Unless there are severe endocrine manifestations, this disease has a good prognosis. The bone lesions become static and no malignant changes have been reported.

Treatment: Treatment is primarily directed at correction of deformities resulting from pathological fractures. Bone grafting is sometimes necessary. Solitary bone cysts have been successfully eradicated by curettage and filling the cavity with bone chips.

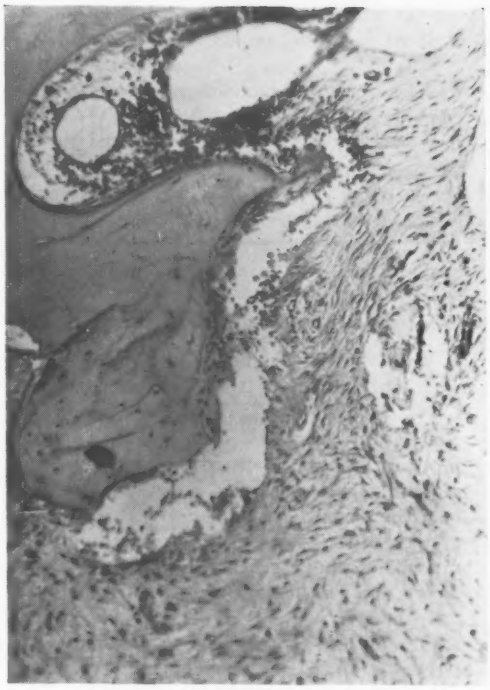

Fig. 7

Summary

A case of polyostotic fibrous dysplasia in a 43 year old woman is presented. Various aspects of the disease are discussed.

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Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

EDITORIAL SECTION

"LOOKING BACKWARD"

THE NEW YEAR brings with it a new volume of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, Volume V. As we put Volume IV on the shelf, it seems appropriate that we review its contents and ask ourselves if we have achieved the aims announced as our objectives in January, 1949. Three functions of the JOURNAL were then recognized: the publication of scientific articles; the printing of official reports and announcements of the Association; and the reporting of matters of peculiar concern to medical women in the field of legislation, socio-economics, and public relations.

In regard to the publication of scientific articles, we have been privileged to receive many fine contributions reporting the results of clinical investigations and medical research. The high caliber of these articles is evidenced by the fact that the *Journal of the American Medical Association* now lists the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION among those medical periodicals whose articles are abstracted and published in its department of "Current Medical Literature." Our JOURNAL has also been requested for exchange by such outstanding institutions as The Royal Society of Medicine, England; the Galicia Clinica, Spain; the Institute Portuguesa de Oncologia, Portugal; and many others.

As in past years, our chief emphasis has been focused upon the reporting of contemporary medical thinking, and upon informing our readers of current progress in medicine, through our departments, "Recent Advances in Medicine" and "Reports of Proceedings."

Our second function as the official organ of the American Medical Women's Association is a passive one in that we print what we receive. If this has been too little, too late, we regret the inadequacy but deny the responsibility. It is depressing and disheartening to hear of the fine meetings which have been held by the Branches, of the interesting papers that have been presented for discussion, with never a word of these meetings, before or after, to reach the editor's desk.

We are happier in considering the performance of our third function, the reporting of matters of especial importance to medical women, for we have published several important articles dealing with opportunities of interest to them. We have continued our series on "The Status of Women Physicians around the World" in 1949, adding Turkey, Denmark, and Sweden to the countries previously discussed. We have inaugurated two new series of articles dealing with the activities of medical women: one, "Medical Practice around the World," and the other, "Hospitals Founded by Women Physicians," calling attention to this little-recognized contribution of medical women to the training of physicians and nurses and the care of the sick. In the "Album of Medical Women" we have published short biographical sketches of outstanding personalities of the past and of the present, whose lives are an inspiration to all women in medicine, graduates and students alike. This then is our report for 1949.

"LOOKING FORWARD"

On the scientific side we are happy to say that the department, "Seminars on Therapy," announced in 1949, will take form in 1950, under the editorial supervision of Dr. Frieda Baumann, Professor of Medicine at Woman's Medical College of Pennsylvania. Many new drugs and techniques have appeared in the field of therapy. Which of the new have been sufficiently standardized and tested so that they may safely be used by the general practitioner? Which of the old should be discarded? Which have withstood the test of time? In this department such questions will be answered by experts in the various fields of medicine.

We are still looking for an editor for the section, "Clinics in Health Promotion." More than disease prevention, the purpose of this department

is to apply to the individual those techniques in the control of disease and promotion of health which have heretofore proved effective in large groups.

Since the interpretation of pathological conditions depends upon an understanding of basic physiological principles, we shall in 1950 attempt in our "Reviews of Physiology" to report the newer concepts in this field.

In this number of the JOURNAL we present the first of our Problem Clinics. Questions dealing with the legal, administrative, and business sides of medical practice will be answered in this department.

We are very happy to announce that all the institutions dedicated to the training of women physicians are participating in the publication of special numbers of the JOURNAL. The Woman's Medical College of Pennsylvania has each year had a special number, and the New York Infirmary a biennial number. In this January number, the articles have been contributed by the Children's Hospital of San Francisco. May will bring a special number from the Women's and Children's Hospital of Chicago, and November, a number from the New England Hospital for Women. The JOURNAL's objective, service to women in medicine, is being attained by the cooperation of these institutions. We trust we shall be mutually helpful.

Transcending the interests of the American Medical Women's Association and of women physicians in any land are the obligations and responsibilities of all physicians everywhere to the peoples of the world. The editor is proud of the part the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION has played in dissemination of information regarding the activities and accomplishments of the World Health Organization, and cherishes the letters of commendation from officials of this United Nations agency. As in 1949, so also in 1950, the JOURNAL will continue to bring to its readers chronicles of the activities of the World Health Organization and of its progress in the building of a peaceful, healthier, and happier world.

—A.C.R.

The Editors welcome the opportunity of presenting this special number of the JOURNAL prepared by the staff of the Children's Hospital of San Francisco under the direction of its distinguished member—*M*

DR. GERTRUDE FLINT JONES

Guest Editor

DR. GERTRUDE FLINT JONES has had a notable career. A native daughter of San Francisco, she received her bachelor's degree from Stanford University and, in 1923, her medical degree from Stanford University School of Medicine, after which she went to Ohio State University, Columbus, as Medical Advisor to Women. While in Columbus she worked in the Medical School clinics in the evenings, but finding that her interest was in active medical practice, and feeling a need for further training, she left for New York. There she became affiliated with the clinic of Cornell University Medical College and with the New York Post-Graduate and Bellevue Hospitals. Following this experience she spent four months studying in clinics in Vienna, and then relaxed by a trip around the world.

Returning to San Francisco in 1928, she was offered and accepted a residency in surgery and gynecology at Children's Hospital, and ever since has been closely associated with that institution. She is at present Attending Physician in the Department of Obstetrics and Gynecology at Children's Hospital, Assistant Clinical Professor of Obstetrics and Gynecology at Stanford University Medical School, and Assistant Attending Obstetrician and Gynecologist at San Francisco County Hospital.

The Hospital for Children and Training School for Nurses

1875-1949

Lois Brock, M.D.

THE HISTORY of the Hospital for Children and Training School for Nurses dates back to the year 1875, when a group of philanthropic women formed a society under the name of the "Pacific Dispensary for the Care of Women and Children" in San Francisco. The dispensary had an ambitious program: to provide medical and surgical aid for sick women and children by competent women physicians, to further the advancement of women in the study and practice of medicine, and to establish a training school for the education of nurses.

In the early history of the hospital, the leadership of one woman physician seems largely responsible for the attainment of these ideals. Charlotte Blake Brown came to California in 1851, arriving at the age of five with her family, to rejoin her father, a minister and founder of a boys' school in Benicia. She returned later to New England and, at the age of twenty, graduated from Elmira College, New York. Following her marriage, and with the responsibility of three children, she began to read medicine with her family doctor in Napa. She entered Woman's Medical College of Pennsylvania in Philadelphia and graduated after two years, the senior year being spent as a hospital intern. Dr. Brown returned to San Francisco to practice in 1874, here to realize her dream of a hospital center for women in the West. She was one of the original group to enter the State Medical Society and was the first woman to be made chairman of a committee. In 1877, Dr. Brown performed the first ovariotomy done by a woman surgeon on the Pacific Coast.

Associated with her in the pioneer years of the Dispensary were Dr. Martha Bucknall and Dr. Sara E. Brown. They called upon seventy prominent San Francisco women and found eight who were willing to be members of the first Board of Managers. The Dispensary started in a humble way in one rented room at 520 Taylor Street, between Post and Geary Streets. Service was for women and children, but the care of children predominated. Medical care was given free, but a nominal charge was made for medicines. Financial

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Charlotte Blake Brown, M.D.

Hospital for Children, 1880

support was obtained through contributions, bazaars, fairs, musicals, and benefits. In the first two years of its existence housing was a problem. Finally, two adjacent two-story and basement houses were united to form the first hospital building. Here in 1880, the first training school for nurses west of the Rockies was established. A resident and intern were trained that year, and in 1883 the first class of three nurses graduated. Here the first orthopedic operations for disease of the hip joint were performed by Dr. Harry Sherman, and for many years the Pacific Dispensary was the only place on the west coast where there were free beds for medical and surgical care of children.

From this location the dispensary moved, in 1886, to its present site on California Street. A two-story frame building was erected and the dispensary re-incorporated as the Hospital for Children and Training School for Nurses. Cows were pastured in an adjacent lot to supply milk for the hospital. Two additional floors were soon added, and the Alexander Maternity Cottage followed in 1892. Thanks to the interest of Annie Laurie, a feature columnist of the San Francisco *Examiner,* and the financial backing of Mr. William Randolph Hearst and others, funds were collected for the Little Jim Building. Mr. Hearst sent an architect to Europe in 1895 to study the latest plans in hospital construction, the round wards of Jim and the Eye and Ear Building, which were built on Sacramento Street, being the outcome. The first elevator in San Francisco large enough to carry a hospital bed was installed in the Little Jim Building for the care of the crippled child.

At the time of the 1906 earthquake and fire the main building was so nearly destroyed that it was condemned. Jim, the Eye and Ear, and the Alexander Maternity buildings then housed all the patients. The disaster and the greatly increased need of hospital beds made a new building imperative. The present main building and east wing were dedicated in 1911. Funds were collected after the earthquake and fire and a building site was given by the Hearst family for the construction of a Contagious Pavilion in 1912. The old Hahneman Medical College was rebuilt as the Nurses Home and Annex in 1922 and the west wing Maternity was added in 1928.

The hospital was built and has been maintained by the generosity of citizens in San Francisco and elsewhere, who hold the institution in high repute. Sources of income have included endowment of beds, bequests, fund drives sponsored by the Board of Directors and the Auxiliary, and the revenue from private patients. Since 1923 the hospital has been an agency of the San Francisco Community Chest.

The several additions made over the years have given the hospital seven buildings, four of which are used to house patients. A program for the replacement of the older buildings is now in effect and the first stage of construction will be a centrally located wing to house surgeries, delivery rooms, laboratories, x-ray and other services for

patients. Funds are available for this building and construction will be started in the spring of 1950.

The policy of the hospital of advancement of women in medicine is carried out by giving women physicians staff appointments and offering opportunities for intern and residency training to women doctors. The hospital is affiliated with the University of California for teaching purposes. Since the first applicants in 1880, four hundred and sixty women have had a one-year rotating internship, and two hundred and fifty have had resident training in the specialties.

The vision and pioneer spirit of those public-spirited women who founded the Pacific Dispensary have been maintained through the years of growth and progress, and the original ideals of the founders—"the care of women and children and the advancement of women in medicine"—remain unchanged in the Children's Hospital of today.

The Educational Program at Children's Hospital

Jane Schaefer, M.D.

THE EDUCATIONAL PROGRAM for interns and residents at the Children's Hospital has been expanded and intensified during the last four years, utilizing the teaching material from both private and clinic admissions. Last year 7,792 patients were admitted to the hospital, bringing the average daily census of patients, excluding newborns, to 185. The capacity number of beds is 250. Service patients constituted 17 percent of the admissions, and a total of 22,924 patients were seen in the various departments of the outpatient clinic.

In 1948, the house staff consisted of 8 interns, 11 assistant residents, and 4 residents, serving in the departments of medicine, surgery, communicable diseases, pediatrics, obstetrics and gynecology, ear, nose, and throat, orthopedics, and radiology. The residents are in charge of, and responsible for, all service patients seen in the clinic and admitted to the hospital, under the supervision of an attending staff member. The residents are further responsible for intern and student nurse teaching. A valuable portion of the training comes from examination, diagnosis, and care of private patients, and from assisting the attending physicians and surgeons in hospital and at surgical procedures. The attending physicians also spend an unusual amount of time on their daily rounds for instruction of the house staff, which is particularly valuable in that it gives a broad experience in the handling and treating of hospital patients.

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The educational program includes weekly conferences in each department, with practical instruction supervised by the attending staff in bacteriology, electrocardiography, pathology, radiology, serology, and technical procedures. Weekly x-ray and pathological conferences and monthly clinical pathological conferences are scheduled for the entire house staff. Formal rounds are conducted at least once a week on each service, incorporating discussion of both clinic and private cases. Although the number of admissions is not large, the various services offer a wide range of differential diagnoses, and these are further supplemented by participation at regular weekly rounds at the University of California Medical School and the Stanford School of Medicine.

The library, so important to any educational program, is well equipped with current journals and medical volumes. Motion pictures are available, providing excellent additions to many of the conferences. The interns and residents also have full responsibility for clinical records of private and service patients under direction of a staff record committee. Further, the resident staff is encouraged to use this material for research, and in several departments original papers are required.

Some of the special educational opportunities in each department may be mentioned briefly:

Medicine. Training includes work in general medicine, allergy, dermatology, syphilology, neurology, and psychiatry. Practical instruction is given in electrocardiography, physiotherapy, and dietetics. An original paper is required.

Communicable Diseases. The plan of instruction in this department is designed for comprehensive training in contagion. Since poliomyelitis and the differential diagnoses of related diseases constitute

Children's Hospital, San Francisco, Today

a high percentage of admissions, supervision of 55 extra beds devoted to convalescent poliomyelitis is included in this department.

Pediatrics. This service includes all children admitted to the hospital, even though the major admission is for a specialty service. Experience in premature care, maternal education, and nursery emergencies is gained on the newborn service. The out-patient department consists of well baby care, dermatology, allergy, cardiology, immunity, and posture correction clinics. Time is also spent in child guidance, and field trips to places of pediatric interest are arranged throughout the year.

Anesthesiology. The educational program consists of a thorough review of the basic sciences applied to anesthesiology, and application of the fundamentals of anesthesia by the actual giving of anesthetics under the supervision of attending anesthetists. Attendance at a series of lectures for anesthetists given each year at the University of California and at weekly conferences at Letterman Hospital are required.

Surgery. General surgery at Children's Hospital includes neurosurgery, plastic surgery, thoracic surgery, traumatic surgery, and urology. The program is aimed at providing two years of experience in this field following internship.

Radiology. Training in radiology has been organized to include a three-year period providing the necessary qualifications for certification. The work in fluoroscopy, diagnosis, and therapy at the Children's Hospital is augmented by attendance at classes in radiation physics at the University of California and at weekly diagnostic and therapeutic seminars at the University Hospital.

Ear, Nose, and Throat. The large ear, nose, and throat clinic in the out-patient department provides a wide variety of clinical experience in diagnosis and treatment of both adult and pediatric patients. The resident spends part of the year on the University of California service.

Orthopedics. Training in orthopedics is available for women, although the program at the Children's Hospital is part of a broader plan of instruction organized by the orthopedic department at the University of California, which includes rotation through several hospitals in the city. The major part of the service at Children's Hospital is devoted to pediatric orthopedics.

Obstetrics and Gynecology. This is one of the largest services both in the hospital and in the out-patient clinic. In 1948 there were 2,283 deliveries. The maternity clinic supplies experience in management of the prenatal and postnatal periods, while the clinical care of both private and service patients is incorporated for teaching management of labor, delivery, and the puerperal period.

THE PROBLEM CLINIC

QUESTION: Can you advise me regarding retirement plans for women physicians?

ANSWER:

Rx For Financial Security

Marion Stevens Eberly

THE PRACTICE OF MEDICINE has often been called a noble profession. Especially for a woman, it seems to combine a basic interest in the welfare of humanity with an almost unbelievable array of hurdles to be crossed before she can exercise that interest.

Any woman who has gone through eight to eleven or more years of medical training, equipped herself with all the costly paraphernalia necessary to practice, and given unstintingly of her professional time to clinic and hospital staff work, has made a rather vast basic investment in her skill and earning capacity. In no other profession is the initial investment so high.

From a purely business standpoint, she would be wise to insure the capital value of her training against major hazards before she may have earned very much more from it than a "Thank you, doctor." More than that, this capital investment—the price she has willingly paid for the "M.D." gilded on her door—also makes possible her earning capacity. From a personal standpoint she may owe it to her family or the family she will have, and she certainly owes it to her own self, to see that her earning capacity is insured.

Why does she need to protect her earning capacity? If she could spend the lovely gold "M.D." itself as coin with any regularity, she would not need to. Opening the door to her first welcome patient, however, simply offers her the beginning of an opportunity to serve and to earn an income. As any physician knows, income depends on practice. Practice depends on prestige, compounded of skill and its daily use, plus growing experience. Unfortunately, the key words here are daily use and growing experience. Any interruption to practice means a temporary loss of income and a setback in the currency of her knowledge and experience.

Mrs. Eberly is Director of Women's Division, Institute of Life Insurance.

Just as it has required a background of persistence and courage for the woman physician to launch herself on a career of independent skill, so it takes a certain bravery for her to recognize as she must that her rewards, of the earthly kind at least, will be directly dependent on her own individual efforts and foresight.

The doctor in public health work or in a salaried job, like other salaried workers and professional people, will often have at least a partial safeguard in terms of income security. The doctor in private practice, who is not covered by workmen's compensation, group life insurance, group health insurance, vacations with pay, an employee pension plan, or Federal Social Security, has no such safeguards. Unless she would rely entirely on chance, or perhaps the good offices of the Philanthropic Institution for Aged Physicians and Their Widows, she has to provide her own financial security.

What are the hazards she needs to guard against? One is an interruption to income. If she has an illness, an accident, a protracted emotional upset, a baby, or takes a trip to Europe, her income stops, save what tardy bill-payers might provide.

Another risk is the possibility of her own death while others are still dependent on her earning capacity. The woman doctor's economic value lies solely in her own sound judgment and specialized knowledge. Unluckily, no way has yet been devised to bequeath these, like brownstone houses or acres of land. Even the physician who year after year decides to invest in a new fluoroscope machine or a shortwave diathermy instead of her family's financial security can reasonably expect these to be of more value to her patients than to her heirs.

About half of all women doctors get married. This in itself sets up certain new family responsi-

bilities over and above any old ones. And many self-supporting women, previously without dependents, have also somewhere along the line to assume the support of youthful or aged relatives. This is particularly often an obligation on the part of women doctors whose families may have skimped to help them get their training and establish themselves.

A third hazard is the diminution of income. If a doctor moves to a new locality, joins the armed forces, or is drawn into a case which brings adverse publicity, it may mean readjusting her entire financial scale, at least for a time.

But most important, and inevitably, her professional income will diminish as she reaches retirement age and finally will stop altogether. Few doctors are endowed with a lifelong income by grateful patients. Only a few staunch souls continue in practice after 65 or 70. Most feel that after their 30 or 40 years of practice they have earned leisure for other things.

Ironically enough, it is often just before this that many women who heretofore have had no dependents acquire them. In a recent survey among a group of retired working women, it was found that they most often had had to assume someone else's support when they were 45, 55, or even 60.

A doctor, then, has just so many income-producing years. That these years are fairly fruitful is indicated by some average figures taken from a group of more than 5000 general practitioners, specialists, full-time salaried doctors, and doctors in service. In 1928 they made an average gross income of $9300. In the depression year of 1935 this had dropped to $6100. By 1943 it had climbed to $13,600, though this partially reflects the wartime shortage of physicians at home.

The advantages of the doctor's high average income are unquestionably tempered by the length of training required and the late start in practice, the expensive equipment necessary to set up one's own office, and the amount of free time that must be given, especially in early years, to build a reputation that will bring a good practice. A doctor is usually 30 by the time she starts out on her career. It often costs her around $8000 to be equipped to receive the first patient. And she is often 35 before she starts earning money much above maintenance costs. Also, on an average among 5000 experienced physicians queried, it seems that the peak years of producing this relatively good income are between 35 and 55, with a sharp decline setting in from there until retirement.

If we resort to the intricacies of the economist's mind, we can say that in effect the number of years in which a doctor will practice, multiplied by the annual income she will earn during that period, represents her entire professional cash value. Just as she would naturally amortize payments on costly equipment in her own home, or subtract a certain yearly amount for equipment depreciation in making out income tax reports, she would also want to build a reserve each year against what amounts to a depreciation of her own money value.

There are several ways in which she can build her reserve against the three hazards, interrupted income, premature death, and cessation of income at retirement. One way is through cash savings and United States savings bonds. Cash in the bank equal to two or three months' income is a good cushion against emergencies, including temporary loss of income. Probably she will further guard against financial effects of accident or illness through the proper insurance. What she undoubtedly is most concerned with, however, is building a guaranteed income to begin when she retires and to continue as long as she lives, and providing for the welfare of her family if she should die in the meantime.

Through her own investments if wisely made, she can of course build up funds. The advantage of private investments is that they sometimes yield a fairly high interest return, but the serious disadvantage is that a high return is accompanied by an element of risk so that such investments need careful and experienced attention. A doctor's work does not usually leave her the time for managing them, even if she has adequate financial judgment and experience to do so. Besides, for physicians there traditionally arises the temptation to make a risky venture upon the advice of a trusted patient.

The doctor who is going to retire on, say, $200 a month at 65 would need an accrued capital of $96,000 to furnish this income at an interest rate of 2½ percent. An income from life insurance or annuities would require only a fraction of that accumulated amount, paid in a lump sum or in yearly premiums. True, the guaranteed income from life insurance and annuities consumes both capital and interest, but it is a stable income that can never be outlived.

Annuities are designed solely to provide a lifetime income. They can be bought in a single payment or annual installments. Depending on the type of annuity selected, they will provide an income for the owner or the owner and someone else as well, and the income will begin at whatever age the owner chooses. Naturally the older she is when income payments begin, the larger the payments will be. Annuities are a sound choice for the professional woman who wants to provide for

her retirement, and either has no dependents or already has her dependents adequately protected with life insurance.

Life insurance itself affords the only way in which the doctor can protect herself against the second and third hazards in one package, guarantee herself an income for life after she retires, and through the same funds assure her family cash or income as replacement of her economic value if she should die before she does retire.

If she is fairly new in practice or has a moderately low income for other reasons, and yet needs to safeguard the value of her training and potential income for her family's sake, she can do this at a low yearly cost through ordinary (or straight) life insurance. This will give a maximum of permanent family protection and will also build funds for herself, to be used by her when the need for family protection has passed. Funds for retirement built through ordinary life insurance accumulate slowly.

The doctor who has gone into debt in order to start herself on a career undoubtedly wants some assurance that the debt will be paid off whether she herself lives to pay it or not. Yet she would hardly wish the payment of it to be left to someone else. In such a case she can use term (or temporary) life insurance to cover the amount of the debt for as long as it would take her to pay it off, and the cost would be only a few dollars a thousand each year.

Perhaps the most useful kind of life insurance for most doctors can be found among the different retirement income plans. These cost a certain amount a year for a specified number of years, and then at the selected age begin to pay the owner a fixed monthly income for the rest of her life. Meanwhile, like all other life insurance, retirement policies provide protection for her family equal to the full amount of the policy. Such family protection starts when the first premium is paid.

If she has some special goal in mind for future time—sending a son or daughter to college, or devoting a certain period of her own career to special work or study—she can achieve this through an endowment policy which would provide the necessary sum of cash at the specified date or a concentrated income for the needed period. An endowment policy, too, would provide full life insurance protection for her family throughout the premium-paying period.

Her choice of the kind of life insurance to buy would depend on her needs. The extent of her obligation to others would determine whether she more greatly needed life insurance with retirement values or retirement income policies with incidental life insurance values. There is even a special kind of policy which would insure the collection of outstanding bills for her family.

Life insurance policies can be written with special clauses to make them particularly useful to the individual. For a doctor, a clause waiving premium payments during any periods of disability would be an important feature, though there is an age ceiling placed on issuing this clause and another on retaining it. Depending on the individual company, this waiver usually expires at around 55 for women.

The arrangement of the doctor's life insurance program, and its re-arrangement as her needs may change, calls for the services of a well trained life insurance agent, one who will know how to adjust the program to the individual pattern of income, taxes, and requirements.

Through her life insurance and other insurance, through savings and investments, a woman doctor can be pretty well assured that her material rewards will be up to what her prolonged training and wholehearted efforts deserve.

* * *

[A new booklet, "Woman with a Future," has been especially prepared for professional and business women. In ten examples it demonstrates how women are using life insurance to meet their financial responsibilities to dependents and to themselves. Copies are available upon request to the Editor.]

This special department, "The Problem Clinic," is offered as a service to readers of the JOURNAL *who wish advice on problems concerned with the business and administrative side of medical practice. Problems of general interest sent to the Editor will be referred to qualified individuals, lay or professional, and the answers will be published. February's problem, "How does one begin a private practice?" from a young resident, will be answered by Connie Guion, M.D., Assistant Attending Physician of New York Hospital, New York. Send your problems to the Editor,* JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, *118 Riverside Drive, New York 24, New York.*

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

ASSOCIATION NEWS AND ANNOUNCEMENTS

THE PRESIDENT'S MESSAGE

As I have tried this fall to fit together the pieces that go to make up the A.M.W.A., two major issues have clarified themselves in my thinking. One, which has been discussed in great detail at our meetings and fortunately voted into being, is the need for an executive secretary. There are innumerable weak spots in the carrying out of our functions that can be strengthened with a minimum of difficulty under the supervision of a capable secretary. The executive secretary can assist with the business management of our JOURNAL and other details, freeing the Editor from work that does not pertain to her office.

Do not think for a minute, however, that secretaries come as a gift from heaven. We will have to support the idea by a renewed drive for membership and prompt payment of our dues January 1.

But this will not be enough. Each member and each branch is asked to make a voluntary gift to carry us over this brief period. The San Francisco Branch started the ball rolling by authorizing its delegate to contribute the sum of one hundred dollars to our general fund. In our Mid-Year Board Meeting at Tucson over eight hundred dollars was pledged in individual gifts. Will you contribute your share? If this issue is met squarely now the executive secretary can earn her salary in the future by consolidating some of our present costs and by a concerted membership drive.

The various funds which we support, the move to better the opportunities for graduate training, and the JOURNAL are not, in real truth, the product of the whole membership. They represent the arduous labors of a very limited number of our fellow members.

It is true that we cannot all have a finger in each activity, but we can contribute a greater interest in and awareness of the mechanisms by which the activities of our association are carried out.

Each branch should commit itself to sending a delegate to our meetings who would return home alive to the program of the parent organization. Some branches would come to life, surprisingly, and find that it was fun to raise one hundred dollars for this or that project. Why not get behind us, put over our goals, before our star performers fall from sheer fatigue? Desuetude is blocking some branches. Is your branch one of these?

Dorothy Wells Atkinson

REPORT OF MEMBERSHIP COMMITTEE

Ruth E. Ellis, 1803 Iris Ave., Riverside Addition, Little Rock, Arkansas.

Marie Louise Fourcade, 490 Post St., San Francisco, California.

Helen Hagey, 26 Graystone Terrace, San Francisco 14, California.

Carolyn C. A. Hays, 1119 N. E. 20 St., Oklahoma City, Oklahoma.

Miriam Pool Huff, Arroyo del valle, Livermore, California.

Alice F. Maxwell, 1201 California St., San Francisco, California.

Lila Bonner Miller, 768 Juniper St., Atlanta, Georgia.

Grace R. Nachod, 17 Hewett Road, Wyncote, Pennsylvania.

Margaret Lawrence Rathbun, 610 Thurston Road, Rochester, New York.

Patricia B. Tudbury, 1642 Larkin St., San Francisco 9, California.

Dorothy P. Danno, 2515 Ocean Ave., San Francisco 16, California.

Elizabeth Hale Laidlaw, 2422 East Helen St., Tucson, Arizona.

Charlotte R. Miller, 400 West End Ave., New York, New York.

Edith Rodreque de Pacheco, Ponce de Leon esq. San Juan 601 Santyrce, Puerto Rico.

Magda Puppendahl Shorney, Christiansted, St. Croix, Virgin Islands.

HELEN JOHNSTON, M.D.
Chairman

MIDWINTER BOARD MEETING

At the Midwinter Board Meeting of the American Medical Women's Association, held in Tucson, Arizona, November 11 and 12, 1949, there were 31 members and 2 guests registered with the Credentials Committee. This number included 6 officers, 19 committee chairmen, 8 delegates, and 6 members participating without vote, and represented Washington, D. C., and the following 14 states of the Union: Arizona, Arkansas, California, Colorado, Georgia, Illinois, Iowa, Minnesota, New York, Ohio, Oregon, Pennsylvania, Tennessee, and Texas.

On the list of members attending the Tucson meeting were:

Dr. J. Ahlem, *Recording Secretary;* California

Dr. D. W. Atkinson, *President, Chairman of Executive Committee and ex officio of all other committees;* California

Dr. V. L. Bergeron, *Delegate;* California

Dr. P. Bourne, *Chairman of Auditing Committee;* California

Dr. E. P. Brown, *Chairman of Constitution and By Laws Committee;* Ohio

Dr. A. Chappell, *First Vice-President and Chairman of Reference Committee;* Georgia

Dr. B. Cushman, *Chairman of Medical Education for Women Committee;* Illinois

Dr. D. P. Danno; California

Dr. J. P. Delprat, *Chairman of Credentials Committee;* California

Dr. A. Drips; Minnesota

Dr. V. Erlanger, *Delegate;* California

Dr. M. E. Gardner, *Delegate;* Ohio

Dr. O. Goodwin, *Chairman of Opportunities for Medical Women Committee;* California

Dr. R. Hartgroves; Texas

Dr. H. Johnston, *Chairman of Organization and Membership Committee;* Iowa

Dr. D. Z. Johnston, *Chairman of Annual Meeting Committee;* Pennsylvania

Dr. L. Kent, *Chairman of Public Relations Committee;* Oregon

Dr. A. LeMarquis, *Chairman of Reference B Committee;* California

Dr. R. E. Lesh; Arkansas

Dr. A. Macfarlane, *Chairman of Woman's Medical College of Pennsylvania;* Pennsylvania

Dr. I. S. Maher, *Delegate;* Pennsylvania

Dr. E. Marting; Ohio

Dr. H. E. Maytum; Colorado

Dr. T. McGovern, *Chairman of Mid-Year Meeting Committee;* New York (and Arizona)

Dr. M. M. Nicholson, *Chairman of Legislation Committee;* Washington, D. C.

Dr. M. R. Noble, *Treasurer and Chairman of Year Book Committee;* Pennsylvania

Dr. E. Stenhouse, *Chairman of Reference A Committee and Regional Director of North Central Region;* Illinois

Dr. G. Talbott, *Corresponding Secretary;* California

Dr. S. E. Waugh, *President Elect and Chairman of Committee on Executive Office and Secretary and Chairman of Scholarship Award Committee;* Pennsylvania

Dr. K. W. Wright, *Chairman of Reference D Committee;* Illinois

Dr. K. Zerfoss, *Chairman of Finance Committee;* Tennessee

Two guests, Dr. Marion Fay (Ph.D.), Dean of the Medical College of Pennsylvania, and Dr. Grace Roth (Ph.D.), Department of Biophysics, Mayo Clinic, Rochester, Minnesota, enlivened the dinner meeting with pleasant and instructive discourse.

JESSIE P. DELPRAT, M.D.
Chairman, Credentials Committee

NOMINATIONS FOR OFFICERS FOR 1950-1951

Please send your nominations for the following offices to the undersigned before March 1, 1950. The Constitution provides as follows: "Article III, Section I,—

"This (the nominating) committee shall receive names of one or more candidates for each office to be filled at the next election. The report of the Nominating Committee shall include the names of any active members who may be suggested as candidates for a particular office by five or more active members. All candidates must have consented to serve if elected. The list of nominees shall be sent to the Elections Committee at least two months before the Annual Meeting. If there be no nominations for any office, nominations from the floor are in order."

Please note also Section 2. "All candidates for election to any office in the Association must be Active Members in good standing."

Nominations for the following officers are in order: President-elect, First Vice-President, Second Vice-President, and four Regional Directors: New England, North Central, Northwest, Southwest. When submitting nominations, please also include biographical data regarding the candidates.

ADA CHREE REID, M.D., *Chairman*
118 Riverside Drive, New York 24, N.Y.

Opportunities for Women in Medicine

DEPARTMENT OF THE INTERIOR

THERE ARE A FEW OPENINGS, for which application for examination may be made, in the following briefly described branches of service in the Department of the Interior. The Bureau of Indian Affairs has a number of vacancies which are available to qualified physicians of either sex.

Description of Work

1. **PANAMA CANAL SERVICE (P-3):** District physician in small government dispensary—general supervision; general clinic; examinations; diagnosis and treatment of home patients and patients aboard ships; general charge of business activities at dispensary. **(P-4):** Similar duties to above but higher level of responsibility.

2. **DEPARTMENT OF THE ARMY (P-5):** Occupational health and medicine, epidemiology or medical bacteriology and pathology.

3. **U. S. PUBLIC HEALTH SERVICE (P-3 to P-5):** General practice. Public health—General: (Administrative and consultative). Public health—Venereal Disease Control (Source tracing and follow ups). Occupational health and Medicine: (Program conference with State and County health officers; industrial heads; labor organizations).

4. **VETERANS ADMINISTRATION (P-3 to P-5):** Rating specialist, medical—compensation and pension claims.

5. **CIVIL AERONAUTICS ADMINISTRATION (P-3 to P-5):** Administrative.

6. **RAILROAD RETIREMENT BOARD (P-3 to P-5):** Medical officer and related duties.

7. **CHILDREN'S BUREAU (P-3 to P-5):** Consultative, advisory and related duties in connection with National and State Child Health programs.

8. **INDIAN SERVICE:** Application for positions with Bureau of Indian Affairs may be made directly, **in duplicate,** on Government standard application Form 57 (obtainable at any post office) to: U. S. Department of the Interior, Bureau of Indian Affairs, Washington 25, D. C.

Applicants should state fully all medical education and experience, including hospital appointments. Indian Service is the chief employer of physicians in the Interior Department. Salaries range from $5,232 to $7,432 to start, with periodic increases. A list of Indian Service Hospitals appears at the end of this article. There are 64 hospitals and sanatoria, approximately 3,540 beds, and 380 bassinets in Continental United States, and 8 hospitals with 395 beds and 19 bassinets in Alaska, plus contracts with a large number of public and private hospitals where Indian Service does not maintain its own facilities.

General Requirements

(All Branches)

Applicant must be a graduate of a recognized medical school with degree of Doctor of Medicine.

INTERNSHIP: For classifications P-3 and P-4 ($4,479 and $5,232), full general rotating internship in an accredited hospital. Graduates of 5-year medical schools will be regarded as meeting internship requirements, provided that the 5-year course included the full period of rotating internship.

For classification P-5: (6,235); for some positions in medical pharmacology, medical bacteriology, physiology and pathology, and for all medical officer positions at grade P-5, there is no internship requirement. (See **EXPERIENCE.**)

LICENSE: Must be currently licensed to practice medicine and surgery in a State or Territory of the United States.

EXPERIENCE: For P-3: No experience requirement beyond internship.

For P-4: Internship, plus 1 year professional experience in field of medicine applied for. (This experience may include a residency.)

For P-5: Two years of progressively responsible professional experience in the field of medicine for which application is made. **An internship or residency may not be included in this two years.** Part-time or unpaid experience will be credited on basis of time actually spent in appropriate activities and nature of duties and responsibilities in each position and number of hours a week spent in such employment must be stated fully. **Only experience and education acquired prior to the date of filing application can be considered for examination.**

CITIZENSHIP, AGE AND PHYSICAL ABILITIES:

Must be citizen or owe allegiance to the United States.

Panama Canal Service: Must not have passed 45th birthday on date of filing application.

Indian Service: Must not have passed 50th birthday on date of filing application.

Other Federal Agencies: Must not have passed 62nd birthday on date of filing application.

Physical ability: Body intact and sufficiently functioning. Good near and distant vision (with or without glasses). Ordinary hearing with or without hearing aid. Emotionally stable. Applicants who are offered appointment must pay own expenses in reporting for duty. If disqualified because of physical defects, no refund of expenses. Panama Canal Zone requires vision correctible to 20/40 (Snellen) each eye; hearing 15/20 one ear, 20/20 in other **without** hearing aid. Sufficient teeth for proper mastication. No one with history of organic heart disease (whether or not compensated), pulmonary tuberculosis, mental disease, or epilepsy should apply. Any type hernia—with or without truss—will disqualify.

For fully detailed information regarding applications for examination for any branch other than **Indian Service,** write United States Civil Service Commission, Washington 25, D. C., requesting copy of Announcement No. 106 (unassembled), issued July 27th, 1948.

Indian Service Hospital Facilities

(As of January 1, 1949)

STATE	HOSPITAL	RATED CAPACITY Beds General	Beds Tuberculosis	Bassinets	P. O. Address
Arizona	Chinle*	15	—	2	Chinle
	Colorado River	42	—	4	Parker
	Fort Apache	48	—	6	Whiteriver
	Hopi	38	—	3	Keams Canyon
	Navajo Medical Center	150	100	14	Fort Defiance
	Phoenix	64	—	2	Phoenix
	Phoenix Sanatorium	—	130	—	Phoenix
	Pima	40	—	6	Sacaton
	San Carlos	45	—	6	San Carlos
	San Xavier	46	—	—	Tucson
	Truxton Canon*	10	—	2	Valentine
	Western Navajo	28	—	6	Tuba City
	Winslow	50	—	—	Winslow
California	Fort Yuma	28	—	8	Yuma, Ariz.
	Hoopa Valley	29	—	5	Hoopa
Colorado	Edw. T. Taylor	21	—	4	Ignacio
Minnesota	Cass Lake	32	—	4	Cass Lake
	Fond du Lac	18	—	4	Cloquet
	Red Lake	23	—	6	Red Lake
	White Earth	22	—	8	White Earth
Mississippi	Choctaw	35	—	7	Philadelphia
Montana	Blackfeet	45	—	8	Browning
	Crow	36	—	4	Crow Agency
	Fort Belknap	47	—	8	Harlem
	Fort Peck	23	—	7	Poplar
	Tongue River*	15	—	6	Lame Deer
Nebraska	Winnebago	54	—	9	Winnebago
Nevada	Walker River	34	—	3	Schurz
	Western Shoshone	20	—	—	Owyhee
New Mexico	Albuquerque	60	—	8	Albuquerque
	Albuquerque Sanatorium	—	100	—	Albuquerque
	Eastern Navajo	65	—	10	Crownpoint
	Jicarilla*	20	—	5	Dulce
	Mescalero	32	—	4	Mescalero
	Northern Navajo	43	—	4	Shiprock
	Santa Fe	52	—	6	Santa Fe
	Taos	10	—	3	Taos
	Zuni	42	—	8	Zuni
North Carolina	Cherokee	28	—	7	Cherokee
North Dakota	North Berthold	18	—	6	Elbowoods
	Fort Totten	31	—	4	Fort Totten
	Standing Rock	47	—	5	Fort Yates
	Turtle Mountain	42	—	10	Belcourt
Oklahoma	Cheyenne & Arapaho*	46	—	8	Concho
	Claremore	80	—	18	Claremore
	Clinton	32	—	4	Clinton
	Kiowa	150	—	16	Lawton
	Pawnee & Ponca	50	—	6	Pawnee
	Shawnee Sanatorium	—	150	—	Shawnee
	Talihina	100	137	20	Talihina
	Wm. W. Hastings	72	—	10	Tahlequah
Oregon	Warm Springs	23	—	6	Warm Springs
South Dakota	Cheyenne River	40	—	6	Chey. Agency
	Crow Creek*	20	—	5	Ft. Thompson
	Pine Ridge	51	—	14	Pine Ridge
	Rosebud	40	—	7	Rosebud
	Sioux Sanatorium	—	123	—	Rapid City
	Sisseton	32	—	8	Sisseton
	Yankton	25	—	5	Wagner
Utah	Uintah	24	—	6	Ft. Duchesne
Washington	Colville	36	—	5	Nespelem
	Tacoma	147	189	—	Tacoma
Wisconsin	Hayward	45	—	10	Hayward
Wyoming	Wind River	50	—	4	Ft. Washakie

Indian Service Hospital Facilities, cont'd.

ALASKA	Barrow	18	—	—	Point Barrow
	Bethel	36	—	6	Bethel
	Juneau	50	—	7	Juneau
	Kanakanak	32	—	3	Kanakanak
	Kotzebue	14	—	—	Kotzebue
	Tanana	31	—	3	Tanana
	Mt. Edgecumbe Orthopedic	64	—	—	Sitka
	Alice Island San.	—	150	—	Alice Island

*(Hospitals operating on a limited service basis; i.e., out-patient service only.)

FURTHER REPLIES FROM V.A. SURVEY

Residencies here are open to applications from qualified women. At present, we do not have any women on the resident staff; but this situation is not due to the fact that they are not eligible.

This hospital is affiliated with the Southwestern Medical University of Texas, located in Dallas, and further inquiry in regard to possibilities for acceptance of female residents should be addressed to the Dean of that school. All applications for residency status at the McKinney Hospital must be recommended by the Dean's Committee before being considered at this hospital.

Beginning July 1, 1950, there will be vacancies for interns in general medicine and general surgery. Residencies are available in surgery, to include general surgery and sub-specialties, with the exception of ear, nose and throat. They are also available in medicine, to include an excellent tuberculosis service.

EARL B. ROSS, M.D.
Veterans Administration Hospital
McKinney, Texas

At present, we have no women interns or residents. No definite policy has been established in regard to accepting women in each specialty. Last year a woman applicant for residency in pathology was considered and it was decided then that we would accept women in that particular specialty. This applicant was not accepted, but it was not because of her sex.

We have accepted no applications for any other specialty, but I feel reasonably certain women would be favorably considered in most of the specialties for which we are approved for training. I believe there would be no difficulty in getting approval from proper authorities to accept women in anesthesia, radiology, and perhaps internal medicine.

JOHN F. BUSEY, M.D.
Lawson Veterans Administration Hospital
Chamblee, Georgia

RESIDENCY IN CHEST DISEASES

The Berthold S. Pollak Hospital for Chest Diseases, Jersey City, N. J., is a well equipped and fully approved five-hundred-bed county institution. It provides unusual educational and training opportunities in diseases of the chest.

Appointments to the resident staff of the medical service are made for a period of six months and longer, and can be counted toward requirements for examination by the Board of Internal Medicine.

Applications should be addressed to Frederick J. Quigley, M.D., Medical Director.

* * *

RESEARCH GRANTS FOR OPHTHALMOLOGY

The National Council to Combat Blindness, which was established for the purpose of financing and stimulating ophthalmological research, is now offering grants-in-aid to scientific investigators. This announcement will be of interest to the personnel in medical schools and other institutions conducting research in this field, and to qualified individuals. Applications to be considered for the first group of awards should be in the office of the Council by February 15, 1950. Application forms may be obtained by addressing: Secretary, National Council to Combat Blindness, Inc., 1186 Broadway, New York 1, N. Y.

Changing Your Address?

WHEN YOU MOVE, PLEASE—

Notify us to change your address—allow six weeks to make the change.
Give us your old address.
Give us your new address—complete—including postal zone number.
Please print your name and address.

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JOURNAL OF ....
THE AMERICAN MEDICAL WOMEN'S ASSOCIATION
Suite 3B
118 Riverside Drive
New York 24, N. Y.

REPORTS FROM THE BRANCHES

Branch 3, Maryland

The first meeting of the year of the Women's Medical Society of Maryland started off with a bang when, on October 18, several members made the trip to Washington, D. C., to be with the Washington group for the evening. This is the year the Baltimore group of medical women was to entertain the Washington group, but, since there were so many activities taking place in Washington which made it impossible for many of them to accept our invitation, it was agreed upon between the two groups that this year the Baltimore group dispense with the entertainment.

After renewing acquaintance with the Washington physicians who made us feel welcome, we had a delightful dinner at the Statler. Following this, there was a very informative talk by Dr. Dorothy Anderson of New York, on "Tumors in childhood." There was a remarkable interest shown by the male element present—five physicians of renown who discussed and enlivened the affair. The Baltimore group attended in a body the later public talk on "Polio — Facts the Public Should Know," and, when we left for home, we were all enthusiastic over the fine program we had shared.

Our second meeting on November 17 was highly successful in that Dr. Georgeanna Seegar Jones had been secured to speak on "Infertility" following the dinner which took place at the Blackstone. Notes of her experiences were taken by some of the members for use in their own practice.

There were twenty-three women physicians present, as well as one senior medical student, and all were agreed that this was a most enjoyable and profitable evening. Doctors Van Walbeek and Knottenbelt, arrived but three months ago from Holland and now working at Johns Hopkins, were invited guests who seemed impressed. Three of our charter members, Dr. Bertha T. Shamer, Dr. P. S. Bordeau-Sisco, and Dr. Caroline B. Towles were present and were given an ovation, since this marks the thirty-fifth year since the founding of the Women's Medical Society of Maryland.

I hope to be able to report later on the continued enthusiasm and support of our members in the Women's Medical Society of Maryland.

BYRUTH LENSON LAMBROS, M.D.
Secretary

EMERGENCY PROFESSIONAL HEALTH TRAINING ACT

The Senate passed the bill (51453) establishing an emergency five-year program designed to help relieve the shortage for professionally trained health personnel in the fields of medicine, osteopathy, dentistry, dental hygiene, hospital administration, the public health and nursing professions.

In brief, this bill would authorize a program of federal grants as follows:

(1) To approve educational institutions in the fields of medicine, osteopathy, dentistry, nursing, and public health (including hospital administration).

(a) To assist in meeting costs of institutions.

(b) To provide means and incentive for increasing enrollments.

(c) To aid in maintenance, improvement, and expansion of existing facilities in the establishment of new schools.

(2) To individuals for scholarships, to be awarded qualified students on the basis of ability and financial need.

(3) To states for assistance in development of a program for practical nurse training under an approved state plan, administrated by state boards, for vocational education.

Federal Costs: It has been estimated that over the five-year period federal expenditure will average $55,611,175 a year as follows:

Costs of instruction	$41,095,000
Construction	5,000,000
Scholarships	7,016,175
Practical nursing	2,500,000

This bill received the unanimous approval of the Senate Committee on Labor and Public Welfare and will now be considered by the Health Sub-Committee of the House Interstate and Foreign Commerce Committee.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

INTERNATIONAL SECTION

A NEW YEAR'S MESSAGE FROM THE PRESIDENT
MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

I FEEL VERY GRATEFUL to the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION for giving me this opportunity to send a few words of most cordial New Year's greetings to the large numbers of its readers. The JOURNAL is of great importance to all of us because it provides valuable information about the lives of medical women all over the world.

We are still far from the life without fear for which we have fought and which we hoped would have come nearer. The only way to reach this goal is to do away with rivalries and to try to understand each other.

I hope that our Congress to be held this year in Philadelphia will give us the opportunity to exchange views and to learn that different ways of life may be good as long as they respect the dignity of man.

Each woman bears a responsibility for the building up of a better understanding and a better world. We must all do our part.

A. CHARLOTTE RUYS, *President,*
Medical Women's International Association

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

PROF. DR. A. CH. RUYS, *President*
Honthorststraat 50B, Amsterdam Z,
The Netherlands.

DR. DORIS ODLUM, *Hon. Treasurer*
56 Wimpole St.,
London, W. 1, England.

DR. G. MONTREUIL-STRAUS, *Hon. Secretary*
75 rue de l' Assomption,
Paris, xviéme, France.

Vice-Presidents

DR. BRAESTRUP, Denmark
DR. ERIKSSON-LIHR, Finland
PROF. GAUTHIER-VILLARS, France
DR. GUEST, Canada
DR. MISICWICZ, Poland
DR. REID, United States

ANNOUNCEMENT OF 1950 CONGRESS

The Sixth Congress of Medical Women's International Association will take place September 10 through 16, 1950, in Philadelphia, Pennsylvania, United States of America. This will coincide with the Centennial Anniversary of Woman's Medical College of Pennsylvania and a program of guest speakers has been planned for September 13, 1950, in commemoration of this anniversary. Dr. Frieda Baumann, 1930 Chestnut Street, Philadelphia 3, Pennsylvania, is Chairman of the Committee on Arrangements.

Preceding the Congress, on September 7, 8, 9, the Medical Women's Association of New York City is planning a program of scientific and social activities for the visiting women physicians. Dr. Ada Chree Reid, 118 Riverside Drive, New York 24, New York, is Chairman of the New York City Committee.

American Medical Women's Association will arrange for committees of women physicians throughout the United States to act as hostess groups to visitors to their cities.

EMMA K. WILLITS, M.D.

One of America's pioneer women specialists in the field of surgery, Dr. Emma K. Willits of San Francisco, observed her eightieth birthday in September, 1949. Her appearance, enthusiasm, and interest in people and affairs belie her years. Dr. Willits played an important role in the development of Children's Hospital in San Francisco. She came to this institution as a resident in 1897, and through the ensuing years, by her hard work, singleness of purpose, wise guidance, and unswerving loyalty to the hospital and to medical women, she has contributed greatly toward furthering its unique status. When she retired as Chairman of the Department of General Surgery in 1934 the following resolution was adopted: "That the Medical Staff of Children's Hospital express its profound appreciation of the years of unselfish devotion to the progress of the institution in its manifold activities which have been rendered by Dr. Emma K. Willits, that together with the pioneer men and women instrumental in maintaining the outstanding position of the Children's Hospital in the community, her name is enrolled as one of its preeminent contributors."

The section of western New York State where Emma Willits was born and where she spent her early years produced a number of career women at a time when they encountered not only little encouragement but even open opposition in their efforts to accomplish something beyond the narrow household sphere. She was born September 20, 1869, at Macedon, New York, about 75 miles from Geneva, where in 1849 Elizabeth Blackwell had received the first medical degree granted to a woman in the United States. From the time she was a child Emma Willits knew she wanted to become a doctor. She was influenced in the choice of a career by her interest in Dr. Amanda Sanford who had been a close friend of her mother, and perhaps also by the fact that a woman physician, Dr. Adams, was in attendance when she was born.

However, she did not draw her inspiration from the medical profession alone. Her girlhood coincided with the period of women's awakening to their opportunities in civic affairs as well as in the professions. Susan B. Anthony, whose home was in nearby Rochester, was a relative.

Dr. Willits is a birthright Quaker and had her early training in Quaker schools. This heritage has made itself evident in a simplicity and directness combined with a modest unassuming attitude toward her own achievements. Throughout the years this combination of qualities has characterized her private and professional life. In the Quaker meeting women were recognized equally with men, and this attitude during her formative years impressed her with the feeling of sex equality.

When Emma Willits persisted in her ambition to study medicine, an aunt in Chicago offered her a home while attending medical school. She enrolled in 1892 at the Woman's Medical College of Chicago, which was affiliated with and later absorbed by Northwestern University, and received her medical degree in 1896. Among her teachers at the medical school were Dr. Daniel Brower, Dr. J. Zeisler, Dr. Bertha Van Hoosen, and Dr. Marie J. Mergler, who was also the dean. The students had the advantage of attendance at Cook County Hospital clinics, held by such well-known men as Dr. James B. Herrick, Dr. John B. Murphy, and Dr. Nicholas Senn. The course in medical jurisprudence was given by Judge Mary Bartelme. Women medical students at this period were no longer herded behind screens in the classroom, but they were still referred to as "hen medics" and occasionally hooted at by their male confreres.

The Women's Medical College conducted a large gynecological clinic, which attracted patients from the Italian, Armenian, Polish, and other foreign sections of Chicago because the attending staff were women. Dr. Mergler, who was in charge of this clinic, impressed her students by insisting on gracious care and gentle consideration of the underprivileged groups.

Dr. Willits served her internship at the Woman's Hospital of Chicago, situated on the south side. This was a surgical hospital with a wealth of clinical material and an excellent teaching staff, among whom were Dr. Franklin H. Martin, Dr. Henry T. Byford, Dr. Byron Robinson, Dr. W. A.

Evans, Dr. Sarah Hackett Stevenson, and Dr. Mergler.

An incident in Dr. Willits' early surgical career was prophetic of the dexterity and lightness of touch for which she became noted. She was assisting a prominent surgeon when a visiting doctor, looking down at her hands holding the retractors remarked: "What do you expect to do with hands like that?' He was silenced by the reply: "I will use skill instead of brute force." Forty years later a cast was made of those hands by an internationally known sculptor, Adrien Voisin, who admired their combination of strength and delicacy.

Emma K. Willits, M.D.

Dr. Willits came to San Francisco in 1897 in response to a call for a resident at Children's Hospital (for Women and Children) where she served in this capacity until 1900, when she left the hospital to engage in private practice. At this time she had the support and assistance of the women physicians already established in San Francisco. Dr Willits feels that she owes a great debt to these women, especially to Dr. Emma Sutro Merritt and to Dr. Frances R. Sprague, who were kindness itself in assisting her both in private practice and in her hospital affiliations. She was at first a member of the surgical staff of the Department of Pediatrics, and then became chief of the Department of Surgical Diseases of Children. Later she was appointed chairman of the Department of General Surgery which at that time included child and adult surgery, both general and gynecological. During these years she took time out for several visits to the Mayo Clinic, and in 1923 spent some months studying in Vienna. She remained head of the Department of General Surgery until 1934, when she reached the retirement age of 65, and was then appointed to the consulting staff. She is a Fellow of the American College of Surgeons.

In 1941 Dr. Willits chose to retire from private practice while her hand was still steady. However, she continues to give graciously of her time, skill, and experience when help is asked on any problem. Those who have worked with her recall particularly her patience, tolerance, and gentleness. Even at the height of her busy career she never appeared to be hurried; each patient who sat down with her felt that there was unlimited time for his or her troubles. Her example was an inspiration to many young women in medicine.

Upon her retirement in 1941, the Board of Managers and the members of the Hospital Association wished to express their appreciation of her service to the hospital. Instead of a personal gift an operating table was, at her request, purchased for the surgery.

In the contemplated new wing of San Francisco's Children's Hospital, an operating room in the modern surgery is to be equipped and dedicated to Dr. Willits. Toward this objective, her friends and former patients are contributing a fund which now exceeds $12,000.

As a young woman, Dr. Willits felt that the practice of medicine was a calling rather than a profession. This point of view has continued through all the years of her active and useful life. And although she was laying the groundwork for her career during a period of discrimination against women in medicine, she never felt set apart because she was a woman. Her surgical judgment, her technical skill, her sincerity, and her dignity won her the recognition and respect of both men and women in the profession. The hundreds of devoted patients and friends, the many medical women she has aided and trained, and the expressions of appreciation which poured in at the time of her retirement are a true measure of the place she holds in the community and in the profession.

MURIEL EDWARDS, M.D.

News of Women in Medicine

Ellis Hospital, Schnectady, N. Y., announces the appointment of eighteen resident physicians and interns. Among these are Dr. Ruth Marz, resident, and Dr. Ann Anderson and Dr. Margaret A. Krikker, interns.

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Dr. Hermina H. Hartig, chief school physician in Minneapolis, showed in her annual report for the year 1948-1949 that 15,934 school children had been examined. This was an increase of 5,000 over the previous year. Eight physicians made the examinations.

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Dr. Gioconda Rita Saraniero is Chief of Hematology and Assistant Chief of Oncology at the Naval Hospital, St. Albans, Long Island, N. Y.

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Agnes Scott College, Atlanta, Georgia, announces that Dr. Margaret Vance has been appointed as Resident Physician and head of the Physical Education Department. She is a graduate of the University of Georgia School of Medicine.

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Dr. Eleanor Atkinson Woodbury was this year recipient of the Rochester, N. Y., Academy of Medicine John McCauly Award for the best case report of the year. Dr. Woodbury is a research and teaching fellow in Bacteriology at the University of Rochester Medical School.

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At the Convocation, in June, of the University of Chicago, Dr. Marie Ortmayer was one of ten illustrious alumni cited "for meritorious achievement and outstanding contributions to the welfare of her community." She is president-elect of Branch Two, Chicago.

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In April the Philadelphia County Medical Society conferred certificates on those of its members who had completed fifty years of practice. Among this number were Dr. Ella W. Grim and Dr. Jeannette H. Sherman.

Dr. W. Elizabeth Gambrell spoke to the Atlanta Lions Club on "Recent Trends in Medicine."

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Dr. Victoria A. Bradness of White Plains, N. Y., has been appointed assistant medical examiner for Westchester County, N. Y.

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Dr. Emily Giryotas gave a talk to the Wisconsin Alumni Association about medical women of Chicago who were formerly students at Wisconsin.

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Dr. Minnie Gomery recently returned to her home in Montreal after spending forty-nine years in Srinagar, India, as a medical missionary.

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Grace E. Field, M.D., has been appointed Assistant Director, Communicable and Preventable Disease Control Division, Alaska Territorial Department of Health. During the war, as a member of the U. S. Public Health Service, Dr. Field established and operated venereal disease rapid treatment centers in various areas of the United States.

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The Medical Women's Club of Cincinnati, Branch 11, held their first meeting of the season September 13, Betty Owens, M.D., of Middleton, Ohio, was the guest speaker. Her topic was "Common Skin Lesions in Dermatology." Residents and interns from Cincinnati hospitals were guests.

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Carolyn Hays, M.D., has been appointed Assistant Director, Department of Health, Oklahoma City, Oklahoma.

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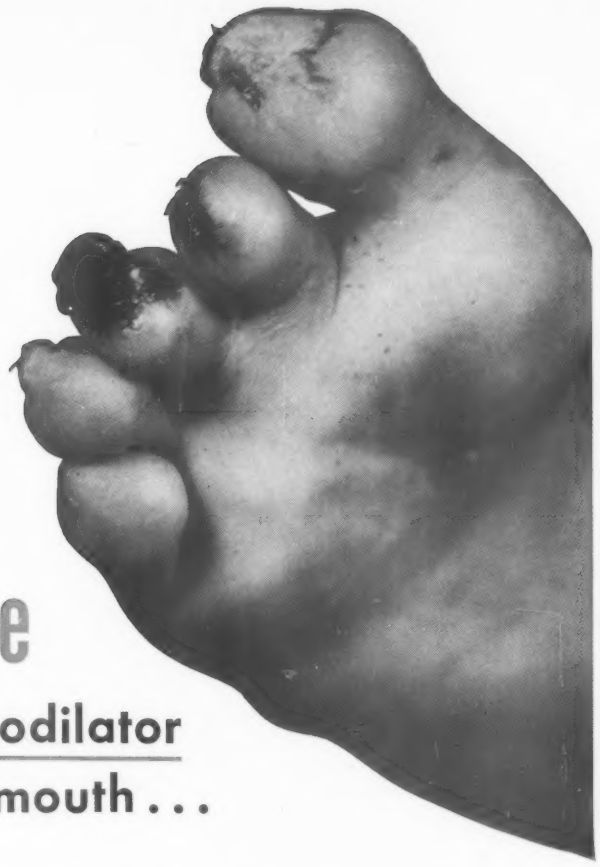
The American Medical Women's Association, Branch Number Two, Chicago, entertained November 2, at their annual dinner for women residents, interns and senior medical students. Margaret H. Austin, M.D., spoke on "Some Medical Complications of Pregnancy" and Bertha Van Hoosen, M.D., on a "Petticoat Surgeon in Copenhagen."

A Special Announcement to Subscribers

During the past three years there has been a steady advance in the cost of production of the Journal of the American Medical Women's Association. The prices of paper and production in general continue to mount and the end is not yet in sight.

It is with reluctance, therefore, that we are forced to announce an increase in the subscription rate from $3.00 to $5.00, inclusive of postage to any part of the world.

Committee on Publication



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Comprehensive literature on request.

1. Rogers, Max P.: J.A.M.A., May 21, 1949
2. Wyatt, Bernard L.: Ann. West. Med. & Surg., Aug. 1949
3. Grimson, Marzoni, Reardon & Hendrix: Ann. Surg., 127:5, May 1948

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1. Brewster, J. M.: U. S. Nav. M. Bull. *49*:1, 1949.
2. Murray, H. G.: Indust. Med. *18*:215, 1949.

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